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RELIABILITY OF SCORING AN ACADEMIC TEST TO WHICH THE EXAMINEES RESPONDED BY WRITING SENTENCES

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Editor's note: **Must school examinations be of the multiple choice or true-false sort to be objective? The author thinks not and presents data to support his contention. He would like to receive data from other teachers.**

THE testing of college students presents a seeming dilemma. The college student should present his own ideas in his own sentences. The college student should make his answers sufficiently clear so that his paper can be scored accurately. Is this a real dilemma? Can an academic test be constructed which will yield both of these desirable values?

A recent ruling of the Muskingum Faculty made the present writer more keenly aware of this problem. The faculty ruled, upon request of the Student Forum, that each teacher must grade the papers coming from the pupils whom he teaches, unless the tests are of the objective type. Upon the spur of the moment, the Dean of the College suggested that a test be called "objective" when two sets of scores for the same papers correlate .90 or above. The faculty accepted this suggestion and incorporated it into its ruling. Does this level of objectivity of scoring prevent the student from writing his own sentences in answer to the examination questions?

The writer has been using for some years a type of test which can be scored by an assistant who uses a test key. Can the writer continue to use this type of test and call it "objective" in the sense defined above? The following report of an experiment in scoring papers seeks to answer this question. The reader must determine to what extent his problem is akin to that of the writer.

The test in question is in general psychology, and consumes 53 minutes of the examinee's time. The time is distributed as follows: 2 minutes for introductory explanations; 2 minutes to write answers

to each of 18 questions; 5 minutes to reread and to correct the answers already written; 10 minutes for a more complete development of the answer to question 19–20. Each question is presented orally and the examinees answer the question given before another question is announced. The examinee normally finds that the allotted five minutes is sufficient to complete or check any sentences which were incomplete, and to be ready when the next question is announced. The teacher or assistant scores the papers and gives them back to the examinees. The examinee checks the scoring on his own paper while the key is read to him. The examinee may if he desires request the rescoring of any question.

The test questions, with the exception of the final one, call for rather specific and concrete statements of facts; the final question is a topic calling for the writing of some developmental paragraphs. Below are a few samples of questions from an examination in general psychology and corresponding statements from the test key.

1. WHAT IS MEANT BY CONDITIONING FEAR? "Fear is conditioned by (1) being caused by a different stimulus or situation (perceptual conditioning) or (2) being expressed in a way different from the seemingly natural way (motor conditioning)."
2. WHAT MUSCULAR CHANGES DOES EXERCISE PRODUCE? "Exercise does not increase the number of fibers in the muscle but does increase the cross section of the fibers of the muscle, thus making the muscle larger and heavier."
3. WHAT IS THE PURPOSE OF A DELAYED REACTION EXPERIMENT? "The purpose is to test the ability of the animal to maintain his orientation toward a goal; the longer period of maintaining such orientation implies greater intelligence on the part of the animal."

How shall it be determined whether or not this test is objective? The writer and his assistant each scored the test twice, the latter using a test key which the writer prepared. The writer did not use the test key in his scoring. The experiment emphasizes two attributes of the test scores: (1) the relative position or rank of the scores from the highest to the lowest, and (2) the grade level of the scores. The product-moment coefficient of correlation was used to show the extent of variable shifting of the scores (shifting up and down with or without change of mean.) The mean, median, standard deviation, and the standard errors of these measures were used to show the grade level of the scores. The change in scoring procedure involves (1) scoring by different persons (teacher and student assistant) and (2) scoring without the use of a test key or with the use of a test key.

IS THIS ACADEMIC TEST IN WHICH THE EXAMINEES WRITE ANSWERS IN THEIR OWN SENTENCES RELIABLE?

Table I shows the reliability of the test as scored by the teacher and as scored by a senior student assistant in the department.

TABLE I

RELIABILITY COEFFICIENTS OF A SENTENCE-ANSWER TEST IN GENERAL PSYCHOLOGY RESULTING FROM TWO PROCEDURES FOR SCORING THE TEST. (N = 79)

Scoring Method	Coefficient of Reliability*	Standard Error of the Coefficient
(1)	(2)	(3)
Teacher Scoring without Test Key	.865	.04
Student Assistant Scoring with Test Key Made by Teacher	.810	.05

* The method used was the split-test method. This method correlates odd and even scores and corrects by the use of the Brown-Spearman formula.

The assistant used a test key, prepared by the teacher, to assist him in the scoring. The teacher did not use the test key. The coefficients of reliability are practically the same. (Table I) The difference is .055 ± .06. This difference is not statistically significant as it might be caused by the chances involved in sampling. The procedure for scoring does not make the test seem more or less reliable.

IS TEACHER SCORING WITHOUT A TEST KEY MORE RELIABLE THAN STUDENT SCORING WITH A TEST KEY?

The lowest coefficient shown in Table II is .82 ± .04 and the highest is .89 ± .02. The difference between the highest and the lowest coefficient

TABLE II

SCORING INTERCORRELATIONS OF A SENTENCE-ANSWER TEST IN GENERAL PSYCHOLOGY RESULTING FROM TWO PROCEDURES FOR SCORING THE TEST. THE SCORING IS REPEATED.* (N = 79)

	The Teacher's Second Scoring		The Assistant's First Scoring		The Assistant's Second Scoring	
	r	S.E.r	r	S.E.r	r	S.E.r
(1)	(2)	(3)	(4)	(5)	(6)	(7)
Teacher's First	.89	.02	.82	.04	.84	.03
Teacher's Second	..	..	.84	.03	.87	.03
Assistant's First	..	..	..	..	.89	.02

* The teacher first scored the test during 11/16-17 and again during 11/27-28. The assistant first scored the test during 11/23-24 and again during 12/10-12.

is .07 ± .04 This difference is not statistically significant as it might be caused by the chances involved in sampling. The scoring procedure did not cause up and down fluctuations in the ranking of the test scores to an extent that it is statistically significant. From the point of view of maintaining a consistent ranking of the examinees the scoring of the assistant who uses a test key is as good as the scoring of the teacher of the examinees.

IN A SENTENCE-ANSWER ACADEMIC TEST, DOES A STUDENT SCORING BY THE USE OF A TEST KEY MAKE THE SCORES OF THE EXAMINEES HIGHER OR LOWER THAN THE TEACHER MAKES THEM?

Table III shows a statistically significant difference between the mean of two scorings of the test in question by the teacher and the corresponding mean of two scorings by the assistant. The difference in mean is 7.3 with a standard error of 1.4. This difference is too large to be explained by the errors of sampling and hence is a real difference of level of scoring. A comparison of medians in Table III indicates the same conclusion.

TABLE III

THE LEVEL OF SCORES IN A SENTENCE-ANSWER TEST IN GENERAL PSYCHOLOGY RESULTING FROM TWO PROCEDURES FOR SCORING THE TEST. (N = 79)

The One Who Did the Scoring (1)	Date of Scoring (2)	Mean (3)	S.E.M (4)	Median (5)	S.E.Md (6)	Standard Deviation (7)	S.E.σ (8)
Teacher:							
First Scoring	11/16-17	57.2	1.8	58.5	2.25	15.65	1.20
Second Scoring	11/27-28	55.5	1.8	55.6	2.25	15.75	1.25
Mean of Two Scorings		56.3	1.8	57.0	2.25	15.70	1.20
Assistant:							
First Scoring	11/23-24	47.7	1.7	47.4	2.10	14.90	1.20
Second Scoring	12/10-12	50.3	1.5	51.2	1.90	13.40	1.10
Mean of Two Scorings		49.0	1.6	49.3	2.00	14.10	1.10
Difference in Mean of Teacher and of Assistant		7.3	1.4	7.7	1.3	1.6	.68

DOES A SECOND SCORING IN COMPARISON TO A FIRST SCORING CHANGE THE SCORE OF AN EXAMINEE MORE WHEN THE SCORING IS DONE BY THE ASSISTANT THAN WHEN IT IS DONE BY THE TEACHER?

This question differs from the question just preceding it in that here the sign of change is disregarded. Table IV indicates change in either direction and refers to the mean change for one score. All other factors previously mentioned remain the same.

TABLE IV

THE ALTERATION OF EACH SCORE IN A SENTENCE-ANSWER TEST IN GENERAL PSYCHOLOGY RESULTING FROM TWO PROCEDURES FOR SCORING THE TEST. (N = 79)

The Scoring Procedure	Mean	S.E.M	Standard Deviation	S.E.	Number of Scores Changed: Raised	Lowered	Same
(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)
Difference of* Teacher's First and Second Scoring of Each Paper	6.04**	.43	3.74	.29	29	46	4
Difference of Assistant's First and Second Scoring of Each Paper	6.00	.50	4.01	.31	46	28	5

*These computations were made from the original data and not from previously stated means.
**These figures indicate the amount of change in either direction and not an increase or a decrease in the mean of the group.

Table IV disclosed some rather interesting facts concerning the rescoring of the test papers. When the teacher rescored the test he changed 75 out of a possible 79 scores; of these changed scores 29 were scored higher and 46 were scored lower. The test permitted a range of scoring from 0–100 on each paper. The range of change or difference of score made by the teacher was from 0 to 16 and the mean of this change was 6.04 ± .43. The assistant when he scored the papers a second time had a range of change from 0 to 15 and a mean change of 6.00 ± .50. A comparison of the procedures for scoring shows that the difference in mean change was so small as not to be significant statistically; a second trial might reverse the difference shown. This similarity in the changes of the two scorers is evidence in addition to that given in Table II supporting the conclusion that the procedure of scoring was not a significant matter in making variable changes in the placement of the ranks of the scores.

The matter which is of most vital concern to the student has not been touched. The student is interested primarily in the report of his score made to the Registrar. This report is made at Muskingum College in terms of grade letter.[1]

Scale for the Teacher	*Letter Grade*	*Scale for the Assistant*
85–100	A	76–100
70–84	B	59–75
53–69	C	45–58
41–52	D	36–44
37–40	E	33–35
0–36	F	0–32

[1] The following are the transmutation tables used in changing a score from figures to letters.

DOES A SECOND SCORING IN COMPARISON TO A FIRST SCORING BY THE ASSISTANT CHANGE THE SCORES AS EXPRESSED IN GRADE LETTERS MORE THAN DOES A SECOND AS COMPARED TO A FIRST SCORING BY THE TEACHER?

Out of a possible 79 changes the teacher in rescoring made 26 changes from one letter to the next consecutive letter up or down. In his rescoring the assistant made 30 one letter changes and 2 two letter changes. If we think of a two letter change as double that of a one letter change, the ratio of letter change of teacher to assistant was 26 to 34. Or out of a total of 60 changes the assistant made 6 more changes than did the teacher. Of the changes made, 43 percent were made by the teacher and 56 percent were made by the assistant.

TABLE V

THE GRADE LETTER ALTERATION OF EACH SCORE IN A SENTENCE-ANSWER TEST IN GENERAL PSYCHOLOGY RESULTING FROM TWO PROCEDURES FOR SCORING THE TEST. ($N = 79$)

The Scoring Procedure	Number of Grade Letter Changes Due to Rescoring			
	One Letter Changes		Two Letter Changes	
	Raised	Lowered	Raised	Lowered
(1)	(2)	(3)	(4)	(5)
Difference of Teacher's First and Second Scoring of Each Paper	9	17	00	00
Difference of Assistant's First and Second Scoring of Each Paper	20	10	2	00

DOES A SECOND APPLICATION OF THE TWO PROCEDURES OF SCORING SHOW A GREATER OR LESS DIFFERENCE BETWEEN THE PROCEDURES THAN DOES A FIRST USE OF THE PROCEDURES?

Table VI discloses that a second scoring of the papers in question made a difference in the scores regardless of the procedure of scoring used; the scoring of the teacher and of the assistant were not compared after the first scoring. Table IV indicates that the teacher lowered his scores with a second scoring and that the assistant raised his scores with a second scoring. Hence the differences between the scores in the case of the second scoring were not as great as in the first scoring. All of the measures in the table show a difference. The difference between the coefficients is $.05 \pm .05$. This difference is not statistically significant; it might be due to chance sampling. The difference between the means is

TABLE VI

DIFFERENCES IN THE COMPARATIVE RESULTS OF TWO APPLICATIONS OF PROCEDURES FOR SCORING A SENTENCE-ANSWER TEST IN GENERAL PSYCHOLOGY. (N = 79)

Comparisons	Intercoefficients and Standard Errors of Coefficients		Mean of Diff.* and Standard Error of Mean		Sigma of Diff. and S.E. of S.D.		Letter** Changes in Scores	
	r	S.E.	Mn	S.E.	S.D.	S.E.	1L	2L
(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)	(9)
Teacher's First Scoring Compared to Assistant's First Scoring	.82	.04	9.92	.79	7.02	.56	39	4
Teacher's Second Scoring Compared to Assistant's Second Scoring	.87	.03	7.51	.55	4.95	.39	25	1

*These measures were secured by a distribution of the differences in the basic data and not by a subtraction of measures previously stated.

**1L refers to a one letter change such as a change from "C" to "D" or "D" to "C" and 2L refers to a two letter change such as from "D" to "B" or "B" to "D."

2.4 ± .96. This difference is not far below that which is usually considered statistically significant; the ratio is 2.5 instead of 3.00. The differences between the standard deviations is 2.07 ± .68. In this case the ratio of difference to standard error of difference is 3.0. In this case a second examination of the papers tended to correct the high scoring of the teacher and the low scoring of the assistant; at least it brought the scores nearer together. But the difference is not quite sufficient to give us full assurance that we are speaking of a normal tendency.

GENERAL STATEMENT IN CONCLUSION

This report sets forth the findings of an experiment in scoring a test in general psychology. The examinees answered factual questions by composing and writing their own sentences. The experiment concerns two methods of scoring the papers. In one method of scoring the teacher of the examinees scored their papers without the use of a test key. In the other method of scoring a senior student assistant in the psychology department scored the papers while using a test key prepared by the teacher of the examinees.

The data of the experiment show that the teacher scored higher than did his assistant. Since the teacher did not have a test key before him, he probably made more allowance for individual interpretation of the questions and for stating the answers in different language, than did the assistant with the test key before him. However, a second scoring by the teacher caused him to lower and the assistant to raise their re-

spective scores; this happened without any comparison of the results of the first scorings.

The main question at issue in the experiment was: Should this type of test be called objective? The standard set by the Muskingum Faculty is a scoring coefficient of correlation of .90. If the coefficient, regardless of who does the scoring, is .90 the test is called objective. The six coefficients yielded by the data vary from .82 ± .04 to .89 ± .02. A repetition of the same scoring procedure in the case of either of the methods gave a coefficient of .89 ± .02. From this point of view the two methods are equally good and neither is to be preferred above the other. Also it is true that the seemingly lower coefficient of the six under consideration is not lower by a statistically significant amount.

This experiment has a bearing on the question, Do academic tests have to be in the true and false, multiple choice, matching, or some such form, in order to be objective? Can the examinees be individualistic in formulating their answers in their own sentences and at the same time write a test paper which can be scored with assurance that the examinees are properly ranked from low to high or high to low? The evidence here presented appears to imply that perhaps this can be done. The writer is hoping that other teachers will furnish further evidence on this problem.

SUBJECT PREFERENCES OF MENTALLY SUPERIOR AND INFERIOR SENIOR HIGH-SCHOOL STUDENTS

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Editor's note: Do the subject preferences of gifted senior high school pupils differ significantly from those of their mentally inferior classmates? From a study of the subject preferences of 226 boys and 218 girls the author says that there is a vast difference in the subject preference of gifted and ungifted pupils.

Do the subject preferences of gifted senior high-school pupils differ significantly from those of their mentally inferior classmates? This question possesses more than academic interest in view of the fact that modern educational theory holds that pupil interest should be one of the important criteria for determining educational practice.

The writer investigated this problem using as his cases pupils of the Everett, Washington Senior High School who were in attendance during the spring of 1937. The entire student body was first given the Otis S-A Test of Mental Ability, Higher Examination, Form A. The results of this examination are listed in Table I.

TABLE I

DISTRIBUTION OF I.Q.'s OF PUPILS TESTED

I. Q.	Number of Pupils
135–139	3
130–134	6
125–129	18
120–124	59
115–119	109
110–114	213
105–109	308
100–104	291
95–99	226
90–94	141
85–89	57
80–84	25
75–79	6
70–74	1
	N = 1463
Mean I. Q. = 104.15	Standard Deviation = 9.60

Those students whose I. Q.'s were one standard deviation or more above the group average (I. Q.'s 114 or higher) were labeled "Superior," and those whose I. Q.'s were one standard deviation or more below av-

erage (I. Q.'s 94 or lower) were labeled "Inferior." Using this technique, 222 cases were included in the superior group and 230 in the inferior group.

Following the administration of the intelligence tests, these students were asked to fill out a questionnaire which contained among other items the following ones which are relevant to this study:

1. Of all the school subjects you have taken, name the one you like best.
2. Name the school subject you like least.

The responses which the mentally superior and inferior students gave to this first question are summarized in Table II.

TABLE II

SUBJECTS MOST PREFERRED BY MENTALLY SUPERIOR AND MENTALLY INFERIOR SENIOR HIGH-SCHOOL STUDENTS

Subject	Boys			Girls		
	Superior N = 126	Inferior N = 100	$D/\sigma D_D$	Superior N = 94	Inferior N = 124	$D/\sigma D_D$
Mathematics	31.8%	8.0%	5.41	11.7%	3.2%	2.82
Science	19.8%	13.0%	1.39	6.4%	6.4%	.00
Shop	18.2%	36.0%	3.02			
Home Economics				10.6%	29.0%	3.57
History and Social Sciences	7.9%	20.0%	2.58	11.7%	16.9%	1.11
Commercial Subjects	7.1%	6.0%	.33	14.9%	16.9%	.55
Music and Art	6.4%	5.0%	.45	9.6%	11.3%	.41
English	4.8%	9.0%	1.24	20.2%	11.3%	1.98
Foreign Languages	4.0%	3.0%	.42	14.9%	4.8%	2.46

The data of Table II indicate very clearly that vast differences exist between the school subjects preferred by the gifted and ungifted groups. By far, the most liked subject of the superior boys is mathematics. Nearly thirty-two percent of them state that it is the best subject they have ever taken. Only eight percent of the mentally inferior senior high-school boys give mathematics as their most preferred subject. The school subject most liked by the mentally inferior boys is shop. Thirty-six percent of them list it as their preferred subject. The superior girls like English best of all, while home economics is by far the most popular subject of the mentally inferior girls. Other differences can also be noted. Superior boys tend to like science better than mentally inferior boys. On the other hand, boys in the inferior group list history and the social sciences as their most preferred subjects much more frequently than do the mentally superior boys. Superior girls give mathematics and foreign languages as their most liked subject in rather large numbers.

while the mentally inferior girls list them scarcely at all. A large number of these differences between the subject preferences of the superior and inferior groups possess statistical significance as can be inferred from the "$D/\sigma D_p$" columns of Table II.

Although the data presented in Table II give a very clear picture of the differences between the superior and inferior senior high-school pupils with respect to their most preferred subjects, these figures do not take into account the dislikes of the pupils for these subjects. It would be possible for a subject to be at the same time the most liked and also the most disliked for a given group. Perhaps a better method of determining the attitude of a group toward a subject would be to compute the ratio of those liking it to those not liking it. Since each pupil was also asked to give the subject he liked least, it has been possible to compute these ratios. These data are given in Table III.

A ratio of 1.00 indicates that a subject is liked and disliked by an equal number of individuals. A ratio of more than 1.00 means that more pupils of the given group like the subject than dislike it. In like manner, a ratio of less than 1.00 indicates that more pupils of the group dis-

TABLE III

SUBJECTS MOST LIKED AND LEAST LIKED BY MENTALLY SUPERIOR AND MENTALLY INFERIOR SENIOR HIGH-SCHOOL STUDENTS

	Boys					
	Superior			Inferior		
Subject	Most	Least	Ratio	Most	Least	Ratio
Mathematics	40	18	2.22	8	22	.36
Science	25	12	2.08	13	9	1.44
Shop	23	0		36	6	6.00
History and Social Science	10	33	.33	20	26	.77
Commercial Subjects	9	0		6	4	1.50
Music and Art	8	1	8.00	5	0	
English	6	34	.18	9	30	.30
Foreign Languages	5	24	.21	3	2	1.50

	Girls					
	Superior			Inferior		
	Most	Least	Ratio	Most	Least	Ratio
English	19	9	2.11	14	19	.74
Foreign Languages	14	9	1.56	6	7	.86
Commercial Subjects	14	2	7.00	21	4	5.25
History and Social Science	11	37	.30	21	53	.40
Mathematics	11	23	.48	4	23	.23
Home Economics	10	6	1.67	36	2	18.00
Music and Art	9	0		14	1	14.00
Science	6	5	1.20	8	11	.73

like the subject than like it. By comparing the ratios of two different groups for the same subject, it is possible to obtain a measure of their respective attitudes toward it.

Referring to Table III it is seen that judged by this criterion mathematics is still much more preferred by mentally superior senior high-school boys than by those boys who score low on the intelligence tests. Although mathematics is given as the most preferred subject by very few inferior boys, it is given as the least liked subject by a great many. Over twice as many superior boys like mathematics as dislike it, while about three times as many inferior boys dislike mathematics as like it. Using this method it is apparent also that English and foreign languages are still better liked by superior girls than inferior girls. The difference between the interest of superior and inferior girls in home economics which was brought out in Table II is also strikingly brought out by this method. Other interesting facts are seen in Table III. Although commercial subjects and shop are not the most preferred subjects of the superior boys, there is none of their group who gives them as being disliked. Music and art are also subjects that are seldom disliked by anybody.

The findings of this investigation show clearly that the preferences of mentally superior and inferior students differ greatly with respect to certain school subjects. Why should this be the case? According to Hartmann, interest in any activity is due to that activity having been performed successfully. Individuals prefer to do the things they can do well.[1] For example, the fact that mentally inferior pupils show very little interest in high-school mathematics, but express marked preferences for shop and home economics is probably indicative of their greater success in the latter subjects than in the former.

Preferences for certain school subjects not only give a clue as to previous success in these subjects, but also act as indicators of future success in the same or similar fields.[2] The existence of marked differences between the subject preferences of bright and dull secondary school students should, therefore, indicate both the futility and inadvisability of administering the same curriculum in both these groups.

[1] Hartmann, George W. "Interests, Attitudes, and Ideals," in *Educational Psychology*. Edited by Charles E. Skinner (Prentice-Hall, Inc., 1936), p. 102.

[2] Dunlap, Jack W. "Preferences as Indicators of Specific Academic Achievement," *Journal of Educational Psychology*, XXVI (1935), pp. 411-15.

THE PERFORMANCE OF ADULTS OF VARIOUS GRADE LEVELS IN SPECIFIC MENTAL FUNCTIONS: A GRADE-BY-GRADE COMPARISON WITH SCHOOL PUPILS*

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Editor's note: Does schooling pay? Is there an increase in performance with the grade level attained? How does the ability of adults compare with those school children of the corresponding grade level? The author presents interesting data from some 200 young men in a Civilian Conservation Corps Camp.

THE PROBLEM

THE data for the present study were obtained from a test used in connection with the educational program in a Civilian Conservation Corps Camp. In a camp of some two hundred young men it was found that a wide range of educational background was represented. A small percent of enrollees had only a fourth-grade education, others a fifth, and so on up the scale to high-school and college levels.

Answers to the following questions were sought:

1. Is there an increase in performance with increase in grade level? For example, is the young man who completed the tenth grade any more capable in arithmetic and vocabulary than one who finished only the eighth grade?
2. If there is an increase in performance per grade level, is the increase gradual or irregular?
3. How does the ability of these adults compare with the ability of school pupils of corresponding grade levels?

PROCEDURE

The test used in the experiment was adopted from Sections I, II, III and IX of the Iowa State College Comprehensive Examination for Vehicle Operators, Revised Form, prepared by Dr. A. R. Lauer.[1] The functions tested are indicated in Table I and samples of test items are given in connection with the results.

* In preparing this study the writer acknowledges the coöperation of the late Supt. R. B. Newman, Oskaloosa, Iowa, and the assistance of Arthur L. Snodgrass, formerly assistant educational adviser, Co. 776—C.C.C.

[1] Sections I and II in the Vehicle Operator's test were originally adapted from the Army Alpha.

TABLE I

FUNCTIONS TESTED

Section	Content	Time in Minutes	No. of Items	Possible Score
1	Arithmetic	10	20	20
2	Vocabulary	4	40	40
3	Auto Mechanics	7	13	13
4	Psychoneurotic Tendencies	5	49	49

The test was administered as a group test to all enrollees upon their entrance to camp. In order to obtain grade norms, for purposes of comparison, the same test was given under the same condition to a random sampling of school pupils in grades four to twelve inclusive in the city in which the camp was located. The test was given near the middle of the second semester. The data in this study are based on the performances of 220 adults, averaging twenty years of age, and 380 school pupils, distributed according to the grade levels indicated in Table II.

TABLE II

NUMBER OF PERSONS TESTED AT EACH GRADE LEVEL

Grade	4	5	6	7	8	9	10	11	12	13	14	Total
Adults	4	4	5	20	62	23	20	18	57	6	1	220
Pupils	43	41	46	40	39	44	46	39	42	0	0	380

RESULTS

In the following tables these things are to be noted: (1) Samples of test items, showing the easiest, average and most difficult items from each section of the test, as indicated by percent of correctness of the adult group; (2) The change in performance per grade level increase, and (3) A grade-by-grade comparison of scores of adults and school pupils.

Section One—Arithmetic

Item Number	SAMPLE ITEMS	Difficulty Rank	Percent Correctness by Adults
1.	How many are 60 cars and 5 cars?.....	Least	94.0
9.	If you buy 2 packages of paper at 8 cents each and a book for 65 cents, how much change should you get from a two-dollar bill?.....	Medium	55.0
19.	A certain division contains 5,000 artillery, 15,000 infantry and 1,000 cavalry. If each branch is expanded proportionately until they are in all 23,000 men, how many will be added to the artillery?.....	Greatest	0.9

It is rather surprising that item one in Arithmetic was missed by 6 percent of the adults. Most of the errors were made by those adults of the lowest grade levels. The difficulty of item 19, as well as its position in the exercise, may well account for its low percent of correctness.

TABLE III

THE SCORES ATTAINED ON THE ARITHMETIC TEST BY PUPILS AND ADULTS COMPLETING THE VARIOUS GRADES IN SCHOOL

Grade	Range		Mean		Median	
	Adults	Pupils	Adults	Pupils	Adults	Pupils
12	3-17	8-18	11.2	13.5	12.0	15.0
11	5-15	8-17	10.5	12.8	11.0	14.0
10	5-16	7-18	10.0	12.1	11.0	14.0
9	2-15	6-15	8.9	10.5	8.0	12.0
8	0-15	4-18	7.7	9.1	8.0	8.5
7	0-11	6-12	6.7	8.2	7.0	9.0
6	1-11	3-12	6.6	7.3	6.0	8.0
5	1-6	2-9	3.0	5.9	2.5	6.5
4	0-3	1-8	1.0	4.3	.5	5.5

FIGURE I

THE SCORES ATTAINED ON THE ARITHMETIC TEST BY PUPILS AND ADULTS COMPLETING THE VARIOUS GRADES IN SCHOOL

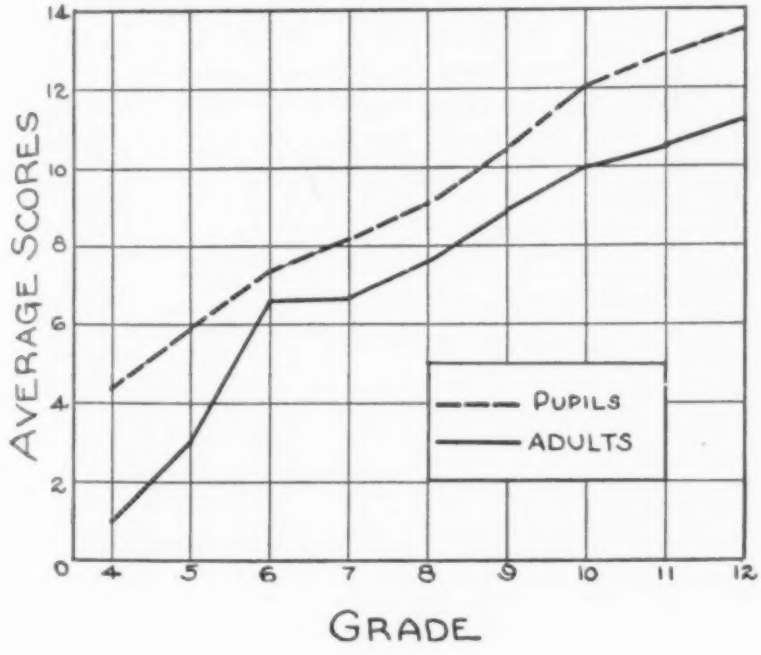


Table III reveals the scores in Arithmetic. It is significant to note the wide range of scores for both groups. The range of scores shows, for example, that some high-school seniors do no better than some fourth grade pupils.

The "mean" columns show a very uniform increment per increase in grade level for both groups, with the school pupils exceeding the adults slightly in every instance. The median scores tell the same story. A graphic view of the relationships is presented in Figure I.

Section Two—Vocabulary

Item Number	Sample Items	Difficulty Rank	Percent Correctness by Adults
1.	no — yes . . . . . Y N	Least	96.0
25.	somber — gloomy . . . . . Y N	Medium	54.0
37.	pertinent — relevant . . . . . Y N	Greatest	12.0

As in Section One, a small percent of the adults missed the simplest item, "are *yes* and *no* the same?" Failure to understand the instructions may have accounted for the errors of the 4 percent of the group making this mistake. Since the score on the test was the number right, some of the correct answers on difficult items was undoubtedly due to chance.

While the general trends in Table IV compare closely with those in Table III, it will be noted that at least two individuals, in grades six and seven, scored zero on vocabulary. The upper limit of the range for *pupils* shows a rather high order of ability for grades seven to twelve. The superiority of pupils over adults is particularly noticeable at the fifth and

TABLE IV

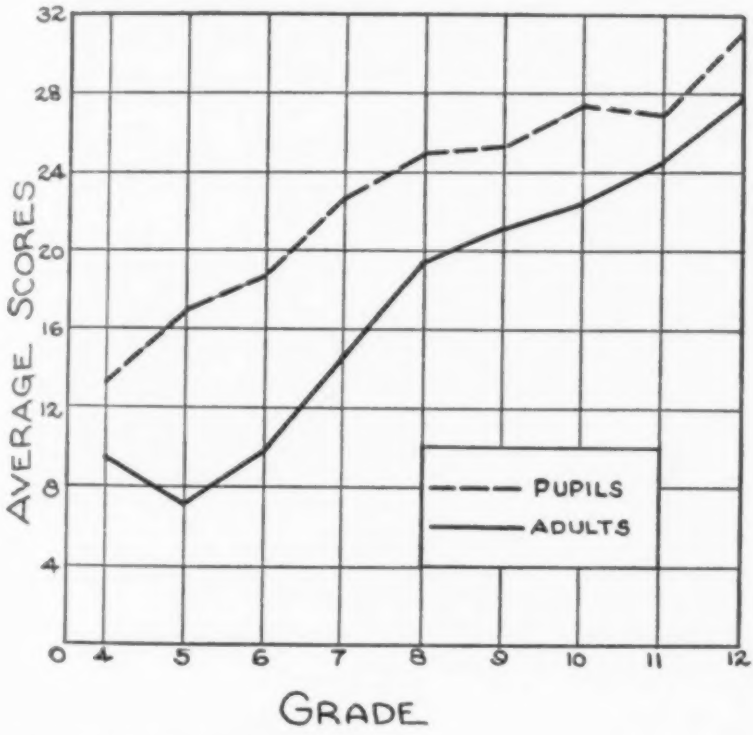
The Scores Attained on the Vocabulary Test by Pupils and Adults Completing the Various Grades in School

Grade	Range		Mean		Median	
	Adults	Pupils	Adults	Pupils	Adults	Pupils
12	14-36	23-38	27.9	31.2	30.0	31.0
11	16-31	16-36	24.6	26.9	27.0	27.0
10	12-31	17-35	22.3	27.4	21.0	28.0
9	5-29	14-34	21.2	25.2	20.0	25.0
8	4-34	12-33	19.4	24.9	19.0	23.0
7	0-26	13-32	14.5	22.6	16.0	22.0
6	0-14	6-29	9.8	18.7	12.0	19.0
5	3-13	4-27	7.2	17.0	8.0	17.0
4	4-14	3-27	9.7	13.3	10.5	12.0

sixth year levels. It will be seen that our small sample of fifth-grade adults did more poorly than the fourth-grade adults, while the eleventh-grade pupils failed to excel the tenth grades. The superiority of the pupils over the adults is again clear, as Figure II will illustrate.

FIGURE II

THE SCORES ATTAINED ON THE VOCABULARY TEST BY PUPILS AND ADULTS COMPLETING THE VARIOUS GRADES IN SCHOOL



Section Three—Auto Mechanics

Item Number	SAMPLE ITEMS	Difficulty Rank	Percent Correctness by Adults
4.	Why do cars often fail to start after a rain?	Least	84.0
9.	Why will one front tire wear more than the other?	Medium	43.0
1.	What instrument is used for testing a battery solution?	Greatest	11.0

In the auto mechanics test, item one proved the most difficult. Only eleven percent of the adults knew a hydrometer by that name. Most of the answers referred to it as a "battery-tester," not properly distinguishing it from a volt-meter or ammeter.

TABLE V

THE SCORES ATTAINED ON THE AUTO MECHANICS TEST BY PUPILS AND ADULTS COMPLETING THE VARIOUS GRADES IN SCHOOL

	Range		Mean		Median	
Grade	Adults	Pupils	Adults	Pupils	Adults	Pupils
12	0-12	3-11	6.4	6.8	6.0	9.0
11	1-11	2-12	5.5	6.7	6.0	9.0
10	0-10	3-9	4.9	5.5	5.0	7.0
9	1-9	1-8	5.8	4.8	6.0	7.0
8	0-11	0-9	4.9	4.2	4.0	5.0
7	0-8	1-7	4.1	3.5	5.0	4.5
6	0-7	0-6	4.6	2.3	5.0	4.0
5	1-8	0-5	3.2	1.8	2.0	2.0
4	0-1	0-3	0.025	0.77	0.0	1.0

Table V shows that auto mechanics information is of a different order from arithmetic and vocabulary. Although the adults' scores included zeros at six of the nine grade levels, the average scores of the adults exceed those of the pupils for grades four to nine inclusive. Apparently, the factors of age and experience are functioning for the adult at these levels. However, the pupils are slightly superior in the upper three grade levels.

FIGURE III

THE SCORES ATTAINED ON THE AUTO MECHANICS TEST BY PUPILS AND ADULTS COMPLETING THE VARIOUS GRADES IN SCHOOL

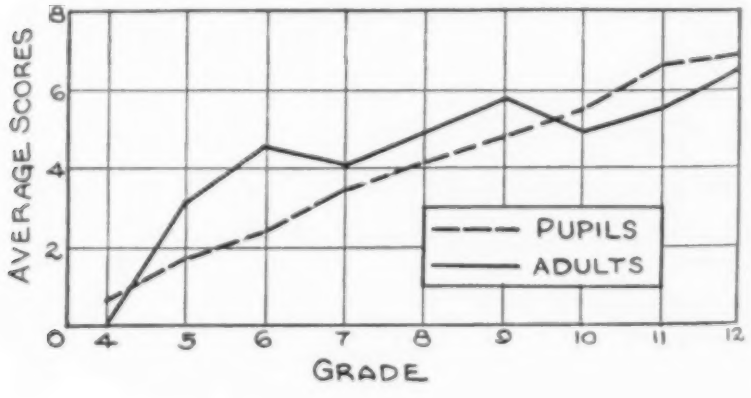


Figure III illustrates a remarkable steadiness of growth of auto mechanics information in the case of the school pupils. As this is probably what one should expect, it would seem that the thirteen items chosen for this section represent a good sampling of auto mechanics information. The slight irregularity of the adult curve may again be due to the small population tested.

Section Four—Psychoneurotic Tendencies

Item Number	Sample Items	Difficulty Rank	Percent Unfavorable Responses by Adults
1.	Do you usually feel well and strong?.....	Least	0.4
23.	Do you have a great many bad headaches?	Medium	15.0
45.	Do you find your way about easily?.....	Greatest	54.0

Section four does not sample a mental function in the same sense as do arithmetic and vocabulary. The complex factors of personality are involved but as one can readily see, a poor score might merely be a function of reading ability. While the averages of adults of the three lowest grade levels are low, there is little evidence that the grade completed is directly related to personality balance. The percent of favorable responses for the upper levels as will be seen in Table VI, range from 77 to 83.

TABLE VI

The Scores Attained on the Psychoneurotic Tendencies Test by Pupils and Adults Completing the Various Grades in School

Grade	Range		Mean		Percent Favorable Responses	
	Adults	Pupils	Adults	Pupils	Adults	Pupils
12	14-49	30-45*	39.8	37.6	.812	.835
11	21-47	21-45*	39.3	36.4	.802	.809
10	23-47	25-45*	38.0	37.4	.775	.831
9	24-48	20-45*	37.8	36.1	.771	.802
8	16-48	**	34.7	**	**	**
7	11-47		37.1			
6	8-38		24.6			
5	1-27		13.0			
4	13-27		19.5			

* Four questions considered unsuitable to ask high school people were removed from original test as administered to CCC enrollees. Therefore, 45 is the maximum score.

** Section Four, dealing with neurotic tendencies, was not considered suitable for grade pupils.

The results may be summarized as follows:

1. The wide range of scores on all types of material and with both groups indicates the great variability in performance at all grade levels. For example, in arithmetic (Table III) the best fourth-grade performance equals the poorest twelfth-grade performance, both with adults and school pupils. This tendency appears in the other sections as well.

2. In arithmetic and vocabulary (Tables III and IV) there is a very steady and consistent increase in average score per increase in grade level for both groups. These data agree with mental growth curves of Pyle and others and indicate that mental development is gradual instead of saltatory.[2]

3. In arithmetic and vocabulary the scores of school pupils are uniformly superior to scores of adults of corresponding grade levels.

4. In the auto mechanics test (Table V) adults of grade levels 6 to 11 all seem to possess about the same amount of information, according to average scores. School pupils again show a steady increase in average score per grade level but are excelled by adults at the fifth- to ninth-grade levels.

5. In personality balance (Table VI) there seems to be deficiency in adults below the seventh-grade level. However, this might well be a function of reading rate. High-school pupils show practically no increase in rating from grades nine to twelve, but the pupils seem to be slightly superior to adults of corresponding grade levels.

CONCLUSION AND DISCUSSION

This study indicates that the abilities of young adults in arithmetic and vocabulary are closely related to the amount of school completed. In other words, it appears that having completed a certain grade in school has rather definite implications as far as these basic skills in young adults are concerned. This is a rather significant finding in view of the popular notion in many quarters, even among students themselves, that the matter of two or three years difference in amount of secondary education received is of little consequence. Probably the additional and more recent training of adults who have had more schooling would seem the most logical explanation for their superior performance. More practice in taking tests or a greater willingness to do their best might also be mentioned. It seems to the writer, however, that there is at least one other

[2] Monroe, W. S., De Voss, J. C., and Reagan, G. W. *Educational Psychology* (New York: Doubleday, Doran, 1930), pp. 400-405.

important factor that cannot be overlooked. Possibly the grade that one completes in school is closely related to his intelligence, and those with inferior ability drop out as they reach their depth and they find the work increasingly difficult. Since the items in arithmetic and vocabulary used in this study are almost exactly like those found in the Army Alpha, it appears that we have sampled intelligence as well as achievement.

A STUDY OF THE INCIDENCE OF EYE DEFECTS AND SEX AMONG POOR READERS

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Editor's note: No school subject has received more attention in recent years than reading. Educators have observed a tendency for failure in school work, especially reading, to occur more frequently among boys than girls. From a study of eye defects of 443 poor readers the author reports that the frequency of eye defects in the two sexes did not parallel the proportion of boy and girl failures. The inference is that the reason for sex differences in reading must be sought elsewhere.

EDUCATORS have observed a tendency for failure to occur more frequently among boys than girls[1, 2] especially in reading.[3, 4, 5, 6] The cause of this peculiar situation is undetermined but it seems probable that if the cause should be in the nature of a physical defect or deficiency the incidence of the determining factor among poor readers would be proportionate, in some degree, to the incidence of sex in the group. The present study was made to determine whether or not eye defects and deficiencies might present such a relationship.

Four hundred forty-three poor readers (886 eyes) were included in the study. To avoid the question that necessarily arises concerning the value of results of physical tests made by non-medical people all cases were examined by a physician,[7] using standard ophthalmic technique. Data relative to vision, condition of refraction,[8] coördination of the eyes in distant vision and in reading vision, and fusion were recorded.

According to accepted practice, the Snellen Test was used for measuring visual acuity, and normal vision was taken as 20/20. Cases were

[1] Betts, E. A. *Prevention and Correction of Reading Difficulties* (Evanston: Row, Peterson, & Co., 1936), p. 4.

[2] Caswell, H. L. *Non-Promotion in Elementary Schools* (Nashville: Division of Surveys and Field Studies, Peabody College for Teachers, 1933), p. 18-22.

[3] Brooks, F. D. *Applied Psychology of Reading* (New York: D. Appleton Co. 1926), Chapter I.

[4] Eames, T. H. "The Ocular Conditions of 350 Poor Readers," *Journal of Educational Research*, XXXII (September, 1938), p. 10.

[5] Monroe, M. *Children Who Cannot Read* (Chicago: University of Chicago Press, 1932), pp. 98-99.

[6] Selzer, C. A. *Lateral Dominance and Visual Fusion* (Cambridge: Harvard University Press, 1933), p. 90.

[7] The author.

[8] Definitions of this and following medical terms appear in: Dorland, W. A. N. *American Illustrated Medical Dictionary*. Philadelphia: W. B. Saunders Co., 1931.

considered to have poor vision when it was found to measure 20/30 or poorer. A considerable variation of opinion as to the significant amount of refractive error exists, and to secure conservative data only those cases exhibiting 1.00 or more diopters of defect were considered as defective in this respect. It is well known that many cases having refractive errors less than the amount taken as a minimum in this study are greatly benefited by correction, while others manifesting an equal error may be almost uninfluenced by it. In conformity with procedure reported in some of the United States Public Health Service studies the terms *hypermetropia* and *myopia* include both the spherical and astigmatic types of the defect. Studying the condition of coördination of the eyes in distant and in reading vision, only those cases which exhibited six or more prism diopters of heterophoria were considered. There is no very great agreement as to the significant amount of heterophoria which may be expected to be troublesome. Various authorities have *estimated* the "Physiological" amount of exophoria in reading vision to be at different points, between zero and eight prism diopters. The author knows of no actual study of this matter except one of his own[9] in which he found that the physiological amount of exophoria varied with age, and that a group of children under 20 years of age exhibited less than one prism diopter of the deficiency, while persons 60 years of age and older, as a group, were found to have a little over eight prism diopters of exophoria in near vision. Clinically, however, it appears that marked trouble is not to be expected in children of school age when horizontal heterophorias do not exceed five prism diopters, and so only those cases were considered heterophoric which exhibited 6 or more prism diopters of one of the component conditions. Cases of deficient fusion were counted when the amplitude of fusion convergence for 12 point type was of four or fewer prism diopters, this level being based on my own clinical experience with the eyes of children who were failing in reading.

The study is limited by its number of cases (443) and by the fact that most of the children studied came from suburban and rural homes. The majority of the patients were of Anglo-Saxon Race.

The girls presented a frequency of low vision that was 23 percent greater than the boys. The findings relating to refractive errors revealed 4 percent more hypermetropia (far-sightedness) and one percent more myopia (near-sightedness) among girls. The girls also exhibited one

[9] Eames, T. H. "Physiologic Exophoria in Relation to Age," *Archives of Ophthalmology*, IX (January, 1933), p. 104.

TABULATION OF DATA

Number of cases			443
Number of eyes			886
Percentage of boys			80%
Percentage of girls			20%
Eye defect or deficiency	Boys	Girls	Difference
Defective vision	33%	56%	23%
Refractive error	33%	38%	5%
Hypermetropia	31%	35%	4%
Myopia	2%	3%	1%
Heterophoria in distant vision	6%	7%	1%
Exophoria	5%	7%	1%
Esophoria	1%	0%	1%
Heterophoria in reading vision	22%	19%	3%
Exophoria	20%	19%	1%
Esophoria	2%	0%	2%
Deficient fusion for 12 point type	22%	24%	2%

percent more heterophoria in distant vision, and of the component types, exophoria occurred one percent more frequently among girls, while esophoria occurred less than one percent oftener among the boys. Coördination of the eyes at the reading distance exhibited three percent more heterophoria among the boys. The two principal types, exophoria and esophoria occurred more frequently among boys to the extent of one percent and two percent respectively. No cases of hyperphoria were encountered in either of the groups. Fusion deficiency occurred more frequently among the girls to the extent of two percent.

The frequency of eye defects in the two groups did not parallel the proportion of boy and girl failures. The tendency was generally reversed, the girls exhibiting a greater frequency of eye difficulties than boys. It is worth noting that heterophoria at the reading distance, both as an entity and as components, occurred more frequently among the boys, but the difference was not great enough to be significant. The only difference between the groups that was greater than 20 percent was in the frequency of low vision. All other differences were not over five percent.

It appears unlikely that eye defects determine the sex distribution of failure in reading.

Summary.—Four hundred forty-three poor readers were given complete eye examinations. They were divided into two groups according to sex, and the differences in frequency of various eye conditions in the groups were compared. There was no parallel between frequency of eye defects and sex incidence.

THE EFFECTIVENESS OF TEACHING BY RADIO *

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and
CLAUDE L. NEMZEK
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Editor's note: Among the new instrumentalities of extreme educational potentiality is the radio. The invention of printing and textbooks did much to give to education its present form. Some persons feel that the effects of radio may in time be equally far reaching. The author presents experimental data of the results secured with a group of Detroit junior high-school pupils.

INTRODUCTION.—The radio is a new factor which science has placed in the hands of society. It has become an important social and educational device in nearly every country in the world. Properly used, the radio may become an invaluable aid in education. Considering this fact, the educator needs to know its value and use.

Purpose of this study.—The purpose of the present study is to measure the educational value of educational radio programs for Intermediate School pupils.

The data.—Two groups of pupils were chosen for this study from grades eight and nine in the Nolan Intermediate School, Detroit, Michigan. Each group was composed of 150 pupils of the white race. The two groups were selected by the matched pair technique so that the groups were equivalent in measured intelligence, sex, and grade. All of the pupils were taking the commercial curriculum.

One group, which may be called the radio group, listened to fifteen educational programs broadcast by the Detroit Public Schools through local radio stations, by the "Ohio School of the Air" through radio station WLW in Cincinnati, and by the "Columbia School of the Air" through the Columbia Broadcasting chain. The other group, which may be called the non-radio group, was taught the same lessons but was not permitted to listen to the broadcasts.

An outline and synopsis, and in many cases a series of questions, were received by the experimenter before the programs were broadcast. From these a test was prepared for each lesson. This test was given before the program was broadcast or the lesson taught and again after the broadcast or after the lesson was taught.

* This paper is a summary of a Master's thesis written by Dean C. Cook: *The Value of Radio as an Educational Factor in the Detroit Public Schools*, Unpublished Master's Thesis (Detroit, Michigan: University of Detroit, June, 1937), 92 pp.

The nature of the groups.—In the Detroit Public Schools the results of the intelligence tests are interpreted in terms of letter mental ratings of A, B, C+, C, C −, D, and E. The approximate I. Q. limits of these letter ratings are 118 or higher, 111 to 117, 105 to 110, 96 to 104, 90 to 95, 83 to 89, and 82 or lower, respectively. For the present study the *Detroit Alpha Intelligence Test* was used. Table I indicates the number and percent of boy and girl pairs used in this study. A glance at Table I reveals that the two groups are matched perfectly according to letter mental ratings. It is obvious that there are 38 boy pairs, and 112 girl pairs. The larger number of girl pairs is due to the fact that a greater number of girls register for the commercial curriculum.

Table II includes the grade distribution of the boy and girl pairs. It is obvious that the two groups are matched perfectly according to grade placement in school.

The chronological ages of the pupils in the radio group range from 12—2 to 16—10 with a mean of 177.2 months and a standard deviation of 9.2 months. The chronological ages of the pupils in the non-radio group range from 12—0 to 17—0 with a mean of 178.6 months and a standard deviation of 10.2 months. Although the two groups were not matched on

TABLE I

LETTER RATINGS IN INTELLIGENCE OF BOY AND GIRL PAIRS

Letter Ratings in Intelligence	Boy Pairs		Girl Pairs	
	Number	Percent	Number	Percent
A	0	0.0	5	4.5
B	3	7.9	12	10.7
C+	4	10.5	17	15.2
C	21	55.3	60	53.6
C—	5	13.2	5	4.5
D	4	10.5	9	8.0
E	1	2.6	4	3.6
Total	38	100.0	112	100.0

TABLE II

GRADE PLACEMENT OF BOY AND GIRL PAIRS

Grade in School	Boy Pairs		Girl Pairs	
	Number	Percent	Number	Percent
9A	10	26.3	28	25.0
9B	28	73.7	67	59.8
8A	0	0.0	17	15.2
Total	38	100.0	112	100.0

age, the means and standard deviations for the two groups are very similar. The difference in mean ages is only one month. This difference is not statistically significant.

A comparison of the occupations of the fathers of the pupils was made. The occupations of the fathers were grouped into eight categories according to the occupational classification of the United States Department of Labor.[1] Table III shows the number and percent of pupils for the radio and non-radio groups classified according to occupational status of father. Although the groups were not matched on the occupational status of the father, the two groups are very similar in that respect. The differences between the two groups, as presented in Table III, are not statistically significant.

The results of the study.—The two groups of pupils were tested before and after each lesson was presented. The tests were scored on a percentage basis. The change from the initial test to the final test was calculated for each pupil. Table IV shows the title of each lesson that was taught and the number of items in each of the tests. It is obvious that the single tests are short. This lowers the reliability of the individual tests, but the

TABLE III

OCCUPATIONAL CLASSIFICATION OF THE FATHERS OF THE PUPILS IN THE RADIO AND NON-RADIO GROUPS

Occupational Classification	Radio		Non-Radio		Differences in Percentages*
	Number	Percent	Number	Percent	
I. Professional and kindred workers	16	10.7	17	11.3	—0.6
II. Salespersons	10	6.7	6	4.0	2.7
III. Clerical workers	2	1.3	2	1.3	0.0
IV. Service workers	20	13.3	27	18.0	—4.7
V. Craftsmen (skilled workers)	40	26.7	38	25.3	1.4
VI. Production workers (semi-skilled)	45	30.0	48	32.0	—2.0
VII. Physical labor workers (unskilled)	11	7.3	5	3.3	4.0
VIII. Unassigned persons	6	4.0	7	4.7	—0.7
Total	150	100.0	150	100.0	0.0

* The negative differences indicate a larger percentage for the the non-radio group.

[1] *Occupational Titles and Codes for Use in Public Employment Offices.* United States Department of Labor Manual, Volume I, Section B (Washington: Government Printing Office, July, 1936). Pp. 124.

TABLE IV

LESSONS TAUGHT AND NUMBER OF ITEMS IN EACH TEST

Titles of Lessons Taught	Number of Items in Test
1. Art Appreciation, "The Gleaners"	15
2. A Safe School	12
3. Mexico	22
4. A Safe Home	15
5. Nicaragua	22
6. Honduras	25
7. Occupations, Machinists No. 1	10
8. Occupations, Machinists No. 2	10
9. Occupations, Maintenance Men No. 1	10
10. Evangeline	11
11. Panama	20
12. Art Appreciation, "Deer in the Forest"	15
13. Treasure Island	10
14. How You Can Make a Magnet	10
15. How You Can Change Electricity into Magnetism	10

reliability of the fifteen tests combined should be fairly high because they yield a total of 217 items. All of the items were of the multiple choice type with five possible cues.

In Table V are presented the mean changes from initial to final test for the radio and non-radio groups on each of the fifteen tests and for the fifteen tests combined. The standard deviations of the changes are also indicated. Furthermore, the Pearson product—moment coefficient of correlation was computed between the changes made by the two groups. This was done because the two groups were selected by the matched pair technique; therefore, in determining the significance of differences between means, the correlated difference formula was used.

Table VI contains the standard errors of the means presented in Table V, the standard errors of the differences between the means, the differences between the means, the ratios of the differences between the means to the standard errors of the differences between the means, and the chances of a true difference greater than zero.

A study of Tables V and VI indicates that ten of the sixteen differences between the means are in favor of the radio group. Two of the differences are statistically significant. Four other differences are nearly statistically significant. Six of the sixteen differences between the means are in favor of the non-radio group. In three instances, the differences are statistically significant; two others closely approach statistical significance. The outstanding point in Tables V and VI is that the radio group is superior on the total test.

TABLE V

MEANS AND STANDARD DEVIATIONS OF CHANGES FROM INITIAL TO FINAL TEST FOR THE RADIO AND NON-RADIO GROUPS

Lesson Tests	Radio		Non-Radio		Pearson r's Between Changes
	Mean	S.D.	Mean	S.D.	
1	46.5	13.5	42.8	9.4	.01 ± .06
2	15.6	10.7	17.2	12.9	—.11 ± .05
3	41.3	8.4	46.2	10.8	.08 ± .05
4	14.1	9.5	17.6	10.2	.10 ± .05
5	44.6	11.2	48.8	10.8	.51 ± .04
6	39.4	10.6	37.0	10.4	.13 ± .05
7	26.5	10.0	25.5	6.0	.12 ± .05
8	26.5	8.8	25.1	8.1	.29 ± .05
9	25.9	11.0	24.5	8.5	.25 ± .05
10	40.1	11.4	41.9	13.4	.59 ± .04
11	45.5	10.9	47.6	10.6	.37 ± .05
12	45.6	12.1	43.0	10.8	.25 ± .05
13	49.0	15.5	39.7	11.9	—.05 ± .05
14	43.8	10.3	36.8	9.3	.56 ± .04
15	41.9	6.9	39.9	8.9	.25 ± .05
Total	526.0	51.4	509.6	45.0	.41 ± .05

TABLE VI

THE RELIABILITY OF THE DIFFERENCES BETWEEN THE MEANS OF THE RADIO AND NON-RADIO GROUPS

Lesson Tests	Standard Errors of the Means		σ_D	Differences Between the Means*	D/σ_D	Chances in 100 of a True Difference Greater Than Zero
	Radio	Non-Radio				
1	1.10	.77	1.34	3.7	2.76	99.7
2	.87	1.05	1.44	—1.6	1.11	86.7
3	.69	.88	1.07	—4.9	4.58	100.0
4	.78	.83	1.08	—3.5	3.24	100.0
5	.91	.88	.89	—4.2	4.72	100.0
6	.87	.85	1.13	2.4	2.12	98.3
7	.82	.49	.90	1.0	1.11	86.7
8	.72	.66	.82	1.4	1.71	95.6
9	.90	.69	.99	1.4	1.41	92.1
10	.93	1.09	.93	—1.8	1.94	97.4
11	.89	.87	.99	—2.1	2.12	98.3
12	.99	.88	1.15	2.6	2.26	98.8
13	1.27	.97	1.64	9.3	5.67	100.0
14	.84	.76	.75	7.0	9.33	100.0
15	.56	.73	.80	2.0	2.50	99.4
Total	4.20	3.67	4.30	16.4	3.81	100.0

* The negative differences indicate a superiority for the non-radio group.

Conclusions.—This study demonstrates that lessons taught by means of the radio effect definite changes in pupils. The materials taught by the radio method were retained at least as well as those taught in a regular classroom situation. The data indicate that instruction by radio has a definite place in pupil growth and development. The radio certainly should be one instructional device.

THE PROBLEM OF STABILIZING KINDERGARTEN ATTENDANCE

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Alhambra City Schools, Alhambra, California

Editor's note: There are few aspects of education in which there have been more changes and departures from traditional practice than in the area of school attendance. The author presents an analysis of the factors affecting kindergarten attendance in the Alhambra, California, school system, with suggestions for its improvement.

The City Schools of Alhambra, California, recently completed a study of the causal factors involved in the high fluctuation of kindergarten attendance. The Child Welfare and Attendance Department felt that the full benefit of kindergarten participation was lost to the child that was continually absent. Therefore, it was determined to locate as many of the conditions as possible that made it impossible for a child to attend regularly and with the aid of this information to eliminate or reduce these causal factors to a minimum. In this way it was hoped that it would be possible for the home and school, working together, to pave the way toward more regular attendance and thus to see that all of the advantages of kindergarten participation were made available to each and every child through regular attendance.

The study was made to find as many specific reasons as possible why the kindergarten attendance varied so greatly and also to determine why it was so exaggeratedly influenced by conditions that affected the elementary and high school attendance to a minor degree. As a result of these findings it was hoped that a basis might be formed for recommendations that would aid in stabilizing the kindergarten attendance. To this end communications were directed to many of the school systems of the State, to kindergarten teachers and to University Training Schools. Kindergarten-Primary Clubs were also contacted. From the answers received and also from an analysis of four years' attendance records of kindergarten attendance in Alhambra certain conclusions were drawn as to causes of the high absence rate. These conclusions with several possible solutions for remedying this condition are presented in the materials to follow.

The first interesting observation brought out in the study for determining the causes for absence was the great variety of reasons that were suggested by school systems, teachers and individuals closely connected with kindergarten work. Even with this wide variety it is interesting to

note in the list that was given, a poor home or parental situation seemed to receive the major emphasis, health being a second emphasis, and weather or general conditions, third. Specifically these reasons given were:

a. Economic conditions of the home.
b. Unstable home conditions. (Broken home, mother working, etc.)
c. Lack of parental education as to the purposes and value of kindergarten experience with regular attendance.
d. No penalty carried for absence from kindergarten.
e. Kindergarten not considered as important as regular school.
f. Irresponsible parents.
g. Weather conditions.
h. Illness (common to the period of early childhood).
i. Greater solicitude on part of parents in cases of illness or inclement weather.
j. First year away from home environment.
k. Common colds.
l. Children of that age not well stabilized as to health.
m. Too large enrollment per teacher. (Prevents reaching the needs of the individual child).
n. Holiday seasons.
o. Mothers taking children on trips.

As seen from the reasons given, there apparently is a pronounced feeling on the part of kindergarten teachers, administrators, and those particularly interested in kindergarten problems that there must be a greater degree of home coöperation with the kindergarten if the high fluctuation of attendance is to decrease. (As seen by points a, b, c, f, j, and o.)

Other observations which were interesting were:

Second: The average monthly percentage of kindergarten attendance could be expected to be approximately ten to twelve percent below the elementary school A. D. A. (average daily attendance).

Third: In Alhambra it was found that the economic superiority or inferiority of the district from which the children were drawn seemed to make little or no difference as to whether they utilized kindergarten facilities for enrolling their children.

Fourth: In general, absences on the kindergarten level seem to increase with the progress of the semester.

Fifth: Wherever possible it was found advisable to discontinue the use of afternoon kindergarten classes inasmuch as the absences increased. This apparently was due to the need for afternoon naps, shopping by mother, etc.

Sixth: Conditions such as weather, epidemics, and holidays that affected the attendance of the elementary and high schools seemed to have a greatly amplified influence on kindergarten attendance.

Seventh: The monthly fluctuation from highest, A. D. A. to lowest A. D. A. should vary a little more than three times that of the elementary variance, while it was found that the fluctuation in the kindergarten might be as much as four times as great as that of the high school A. D. A.

From these observations and as a result of contacting various types of programs used and methods employed, four suggestions seemed logical in stabilizing kindergarten attendance. These were:

1. After consulting some of the kindergarten teachers of the state that had maintained excellent attendance records the suggestion that "Mother's Clubs" be organized in conjunction with each kindergarten seemed justified. These "Clubs" function along the lines that will best get the full coöperation of the mother with the school and generally consists of a permanent club that meets regularly at the school. At their meetings help is given the parent in child problems of a nature that will best meet their individual needs. It was pointed out that through these clubs the teacher is often benefited even more than the parent in many cases by not only getting the full coöperation of all parents but also in receiving direct help in activities, etc., from the parents.
2. The suggestion was considered when talking to one teacher that the knowledge of the parent in the raising of their children during this period would be aided greatly if the guidance division of the schools might prepare and issue "age development" bulletins that would help the parents by telling them of the functional, physical, educational, social, etc., development of the child during the kindergarten period, and thus pave the way for conferences with the teacher. This should aid in developing a feeling in the parent at this early stage that the school is an agency of help in child development in all phases—not an emphasis only on the academic

field. It was suggested that these bulletins be issued in six-month stages; *e.g.*, five years, five years and six months, six years, etc.

3. Teams for competition in maintaining good attendance, deportment, coöperation, etc., with the aid of awards proved helpful in some instances but failed in the main essential of contacting the home in a desire for better understanding and more complete service on the part of the school.
4. If kindergartens could be made an integral part of the elementary school and perhaps be named as the junior primary or pre-primary unit, no doubt there would be stabilization of kindergarten attendance.

The above study was carried on by Alhambra to bring to light in an objective way as much as possible those observations relating to kindergarten attendance which seemed prevalent but which were not substantiated by any facts. It is not intended to be complete but is intended as a basic study for presenting an opportunity for further specific studies along any one of the problems that were indicated. One of the problems would be the reaction of the parent to the school situation. It would be interesting in this study to find out if the parent feels that the school is falling down in its responsibility much in the same way that the school people felt that the home was falling down in its responsibility.

The Alhambra Child Welfare and Attendance Department would welcome any information of any similar study along this line and would appreciate any suggestions which might be forthcoming from the readers after having read this brief summary of our study.

TURNOVER AMONG NEBRASKA PUBLIC SCHOOL TEACHERS

GALEN SAYLOR

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This investigation was limited to a study of the amount of turnover and the circumstances under which a teacher leaves a position—resignation before or after election, dismissal or failure to reelect, or automatic withdrawal—which can be reported largely on the basis of objective evidence. This procedure should avoid some of the distortion and biased reports which result from attempts to secure subjective statements of the "causes for withdrawal."

[1] Bogar, William. *Turnover Among Nebraska Public School Teachers.* Unpublished Master's Thesis, University of Nebraska, 1938.

AMOUNT OF TURNOVER

2–3	147	60	40.8
4–5	309	139	45.0
6–10	1,465	562	38.4
11–15	568	195	34.3
16–25	971	272	28.0
26–49	516	93	18.0
50 and more	845	116	13.7
Totals	4,821	1,437	29.8

As is usually assumed, the rate of turnover is highest in the small schools of the state; it was approximately forty percent in the systems employing ten teachers or less. Since most of the systems fall within

TURNOVER AMONG NEBRASKA PUBLIC SCHOOL TEACHERS

GALEN SAYLOR
Nebraska State Teachers' Association

Editor's note: Many states have enacted teacher tenure legislation in one form or another. Accurate information is needed relative to the effects of such legislation. The author presents interesting data on the effects of the Nebraska law.

AN extensive study of the amount of turnover among public school teachers in Nebraska and the circumstances under which teachers left their positions for the school year of 1936-37 was made by William Bogar[1] for the Research Department of the Nebraska State Teachers' Association.

The Nebraska unicameral legislature passed a continuing contract law in 1937, which was sponsored by the Association, and the purposes of the study were to (a) gain an insight into this most important professional problem in the state and (b) gather data which might aid in evaluating the effects of this contract law. Tentative plans call for a follow-up canvass of the same schools for the year 1937-38 to determine the actual effects of the law on turnover after it had been in effect for a complete school year.

Data were gathered from a total of 442 school systems in the state by means of a questionnaire. These schools employed a total of 4,821 teachers, which is defined to include all members of the administrative and teaching staff. No attempt was made to secure information from the rural elementary schools, which do not come under the provisions of the contract law, or from the metropolitan Omaha and Lincoln city systems, which have their own "permanent assignment" policy of appointing teachers. Reports were secured for sixty-two percent of all of the teachers of the state, exclusive of these two groups, and hence the data are quite complete and should present a valid picture of turnover conditions in the town school systems of Nebraska.

This investigation was limited to a study of the amount of turnover and the circumstances under which a teacher leaves a position—resignation before or after election, dismissal or failure to reelect, or automatic withdrawal—which can be reported largely on the basis of objective evidence. This procedure should avoid some of the distortion and biased reports which result from attempts to secure subjective statements of the "causes for withdrawal."

[1] Bogar, William. *Turnover Among Nebraska Public School Teachers.* Unpublished Master's Thesis, University of Nebraska, 1938.

AMOUNT OF TURNOVER

The amount and percentage of turnover from 1936-37 to 1937-38 by size of school is given in Table I. "Size of School" is based on total number employed on the teaching and administrative staff. The two-and-three teacher schools are usually ten-grade systems, often located in the open country. All others are regular twelve grade systems located in the towns and cities. Teacher turnover in this study is really teacher withdrawal and means all teachers on the 1936-37 staff who did not return to a position in the same school for the year 1937-38. The returns include, therefore, all teachers whose positions were re-filled by other teachers the following year and teachers who left the system because the positions they held were discontinued. Only 23 cases out of a total of 1,437 cases of withdrawal were due to this latter factor.

Of the 4,821 teachers employed in these 442 schools in 1936-37, 1,437, or 29.8 percent, were not on the staffs of their respective schools in 1937-38. This means that three teachers in every ten did not return to the same school system the following year in the graded and high schools of Nebraska. If we eliminate the 23 teachers who did not return because the position had been discontinued, we find a turnover rate of 29.4 percent from 1936-37 to 1937-38, or, putting it another way, that three out of every ten teachers were teaching for the first time in their respective systems in 1937-38.

TABLE I

AMOUNT AND PERCENTAGE OF TEACHER TURNOVER, ACCORDING TO SIZE OF SCHOOL, 1936-37

No. of Teachers in system	Total No. of Teachers	Turnover	
		Number	Percent
2–3	147	60	40.8
4–5	309	139	45.0
6–10	1,465	562	38.4
11–15	568	195	34.3
16–25	971	272	28.0
26–49	516	93	18.0
50 and more	845	116	13.7
Totals	4,821	1,437	29.8

As is usually assumed, the rate of turnover is highest in the small schools of the state; it was approximately forty percent in the systems employing ten teachers or less. Since most of the systems fall within

this grouping, it is evident that the typical high school system in the state begins the school year with two new teachers on the staff out of every five employed.

Considering turnover from the standpoint of the various branches of the profession, Table II shows that the highest rate is found among senior high school teachers. Over forty percent of such teachers did not return to their respective schools the following year. All of the other groups, namely, elementary teachers, principals, junior high school teachers and superintendents, have about the same percentage of turnover—twenty to twenty-five percent. This confirms the findings of most other studies on this subject.

TABLE II

AMOUNT AND PERCENTAGE OF TURNOVER, ACCORDING TO BRANCH OF PROFESSION, 1936-37

Branch of Profession	Total No. of Teachers	Turnover	
		Number	Percent
Superintendents	442	91	20.6
Principals	468	106	22.7
Senior H. S. Teachers	1,388	603	43.4
Junior H. S. Teachers	212	47	22.2
Elementary Teachers	2,311	590	25.5
Total	4,821	1,437	29.8

CIRCUMSTANCES OF WITHDRAWAL

The present study did not attempt to determine from subjective evidence the causes for teachers leaving their positions, but rather, by means of a check-list, the circumstances under which the teacher resigned or withdrew. Tables III and IV summarize these findings, first according to the branch of the profession and second according to the size of the school system. Considering all teachers only, it was found that approximately one-half (48.4 percent) of the total withdrawals occur after the teachers have been re-elected for another year. Of the 695 teachers who fall in this group, 61.4 percent resigned to accept a position in another school; 17.7 percent resigned to be married; 9.9 percent entered or planned on entering another occupation; 6.8 percent returned to college and the others, or 4.2 percent resigned for personal reasons. The percentages in terms of total turnover of 1,437 cases are shown in the tables.

Almost one-fourth, 24.9 percent, of our turnover group of teachers

TABLE III

AMOUNT AND PERCENTAGE OF WITHDRAWAL CLASSIFIED ACCORDING TO CIRCUMSTANCE OF WITHDRAWAL BY BRANCHES OF THE PROFESSION, 1936-37

Circumstance of Withdrawal	Superintendents No.	Pct.	Principals No.	Pct.	Sr. H. S. Teachers No.	Pct.	Jr. H. S. Teachers No.	Pct.	Elem. Teachers No.	Pct.	All Teachers No.	Pct.
1. Voluntary Withdrawal Prior to Re-election												
a. Teacher to be married			5	4.7	29	4.8	8	17.0	74	12.6	116	8.1
b. Another position had been secured	12	13.2	11	10.4	46	7.6	1	2.1	42	7.1	112	7.8
c. To enter another occupation	7	7.7	5	4.7	22	3.6	4	8.5	15	2.5	53	3.7
d. Hoped to secure another position	5	5.5			15	2.5	1	2.1	11	1.9	32	2.3
e. To return to college	1	1.1			8	1.3	1	2.1	13	2.0	23	1.5
f. Personal factors			1	.9	6	1.0			15	2.5	22	1.5
Sub-totals	25	27.5	22	20.7	126	20.8	15	31.8	169	28.6	357	24.9
2. Voluntary Withdrawal after Re-Election												
a. To accept another position	22	24.2	41	38.7	206	34.2	11	23.4	147	24.9	427	29.7
b. Teacher to be married			4	3.8	45	7.5	3	6.4	71	12.0	123	8.6
c. To enter another occupation	7	7.7	5	4.7	35	5.8	2	4.3	20	3.4	69	4.8
d. To return to college	3	3.3	3	2.8	17	2.8	2	4.3	22	3.7	47	3.3
e. Personal factors			3	2.8	9	1.5			17	2.9	29	2.0
Sub-totals	32	35.2	56	52.8	312	51.8	18	38.4	277	46.9	695	48.4
3. Involuntary Withdrawal												
a. Dismissed by majority action	24	26.3	16	15.1	97	16.1	7	14.9	56	9.5	200	13.9
b. Advised not to be candidate	3	3.3	2	1.9	18	3.0	1	2.1	22	3.7	46	3.2
c. Re-elected but resignation required	3	3.3	2	1.9	17	2.8			16	2.8	38	2.7
d. No board action on re-election	3	3.3	2	1.9	11	1.8	2	4.8	11	1.9	29	2.0
e. Position discontinued			2	1.9	6	1.0			15	2.5	23	1.6
f. Contract not renewed—tie vote	1	1.1	3	2.8	8	1.3	1	2.1	5	.8	18	1.3
Sub-totals	34	37.3	27	25.5	157	26.0	11	23.4	125	21.2	354	24.7
4. Automatic Withdrawal Because of Policy												
a. Marriage during the school year					5	.8			12	2.0	17	1.2
b. Age					1	.2			3	.3	3	.2
c. Other causes			1	.9	2	.3	3	6.4	5	.8	11	.7
Sub-totals			1	.9	8	1.3	3	6.4	19	3.1	31	2.1
	91	100.0	106	99.9	603	99.9	47	100.0	590	99.8	1,437	100.1

TABLE IV

AMOUNT AND PERCENTAGE OF WITHDRAWAL CLASSIFIED ACCORDING TO CIRCUMSTANCE OF WITHDRAWAL, BY SIZE OF SCHOOL, 1936-37

	2–5 Teachers		6–10 Teachers		11–15 Teachers		16–25 Teachers		26–49 Teachers		50 and more Teachers		All Teachers	
	No.	Pct.	No.	Pct.	No.	Pct.	No.	Pct.	No.	Pct.	No.	Pct.	No.	Pct.
1. Voluntary Withdrawal Prior to Re-election														
a. Teacher to be married	13	6.5	37	6.6	17	8.7	22	8.1	5	5.4	22	19.0	116	8.1
b. Another position had been secured	23	11.6	40	7.1	18	9.2	20	7.4	6	6.5	5	4.3	112	7.8
c. To enter another occupation	12	6.0	16	2.9	6	3.1	10	3.7	2	2.2	7	6.0	53	3.7
d. Hoped to secure another position	9	4.5	13	2.3	6	3.1	3	1.1			1	.9	32	2.3
e. To return to college	9	4.5	5	.9	3	1.5	4	1.5			1	.9	22	1.5
f. Personal factors	4	2.0	9	1.5	1	.5	4	1.5	1	1.1	3	2.6	22	1.5
Sub-totals	70	35.1	120	21.3	51	26.1	63	23.3	14	15.2	39	33.7	357	24.9
2. Voluntary Withdrawal after Re-election														
a. To accept another position	38	19.1	197	35.1	57	29.2	83	30.5	31	33.3	21	18.1	427	29.7
b. Teacher to be married	10	5.0	31	5.5	19	9.7	25	9.2	23	24.7	15	12.9	123	8.6
c. To enter another occupation	13	6.5	21	3.7	10	5.1	15	5.5	4	4.3	6	5.1	69	4.8
d. To return to college	2	1.0	16	2.9	4	2.1	9	3.3	3	3.2	13	11.2	47	3.3
e. Personal factors	2	1.0	12	2.1	2	1.0	6	2.2	2	2.2	5	4.3	29	2.0
Sub-totals	65	32.6	277	49.3	92	47.1	138	50.7	63	67.7	60	51.6	695	48.4
3. Involuntary Withdrawal														
a. Dismissed by majority action	31	15.6	102	18.1	20	10.3	38	14.0	6	6.5	3	2.6	200	13.9
b. Advised not to be a candidate	6	3.0	17	3.0	6	3.1	10	3.7	7	7.5			46	3.2
c. Re-elected but resignation required	1	.5	23	4.1	4	2.1	5	1.8			5	4.3	38	2.7
d. No board action on re-election	18	9.0	3	.5	5	2.6	2	.7			1	.9	29	2.0
e. Position discontinued	3	1.5	4	.7	12	6.2	4	1.5					23	1.6
f. Contract not renewed—tie vote	3	1.5	9	1.5	1	.5	4	1.5			1	.9	18	1.3
Sub-totals	62	31.1	158	27.9	48	24.8	63	23.2	13	14.0	10	8.7	354	24.7
4. Automatic Withdrawal Because of Policy														
a. Marriage during the school year	1	.5	4	.7			5	1.8	1	1.1	6	5.1	17	1.2
b. Age			1	.2					1	1.1	1	.9	3	.2
c. Other causes	1	.5	2	.4	4	2.1	3	1.1	1	1.1			11	.7
Sub-totals	2	1.0	7	1.3	4	2.1	8	2.9	3	3.3	7	6.0	31	2.1
TOTAL	199	99.8	562	99.8	195	100.1	272	100.1	93	100.2	116	100.0	1,437	100.1

voluntarily submitted their resignations in advance of re-election or declined to be a candidate for re-election. Marriage was the most important factor in withdrawal for this group, 32.5 percent of the 357 teachers leaving for that reason; 31.4 percent of the group had already secured a position elsewhere; 14.9 percent wished to enter another occupation; 8.9 percent hoped to secure another teaching position but did not have one at the time of submitting a resignation; 6.2 percent were returning to college; and 6.1 percent withdrew for personal reasons.

Involuntary withdrawal covers those cases of turnover in which the position was vacated because the responsible administrative authority did not wish to retain the teacher in the system for another year, as opposed to voluntary withdrawal through free choice of the teacher. Involuntary withdrawal accounts for 24.7 percent of the total turnover. Of the 354 teachers falling in this group, 56.5 percent were overtly dismissed by majority action of the board of education; in 13.0 percent of the cases the teacher was advised by those in authority not to become a candidate for re-election, obviously to avoid dismissal; 10.7 percent of the teachers were nominally re-elected as a "face-saving" gesture, but only on condition that a resignation would be submitted; 8.2 percent of involuntary withdrawal was due to failure of the board to take any action whatsoever, thus leaving the teacher without a contract for the ensuing year; 6.5 percent was due to a discontinuance of the position; and 5.1 percent was due to a tie vote in the board on re-election, resulting in failure to offer the teacher a new contract.

Automatic withdrawal, which is defined as withdrawal because of the automatic application of a board policy, accounts for 2.1 percent of the total turnover. Marriage during the school year is responsible for one-half of this type of withdrawal.

A careful perusal of Tables III and IV gives some interesting insights on the problem of turnover, only several of which may be noted here. Involuntary withdrawal—dismissal, forced resignation and failure to offer a contract—accounts for a larger percentage of turnover among superintendents than among any other group of teachers. The percentage of involuntary withdrawal varies inversely with the size of the school system and becomes a minor factor in the turnover of teachers in the largest city systems.

If we combine similar items in the several parts of the table, the chief factors in turnover are as follows:

Transfer to a teaching position in another system	39.8%
Dismissal, forced resignation, or failure to offer contract	23.1
Marriage	17.9
Transfer to another occupation	8.5

The direct effect of Nebraska's new continuing contract law for teachers on turnover would not be important, according to the evidence supplied by Bogar's study. Under the old law which was in effect during the year covered by the study, teachers had to be re-elected each year by a majority action of the board of education, except that superintendents in certain larger systems could be elected on a three-year contract. Since most of the town districts are governed by a six-member board of education, teachers in effect would be dismissed by a tie vote among the board on re-election, as well as by simple failure of the board to take any action or by overt dismissal by majority action. The new continuing contract law provides that a teacher's contract is automatically renewed for the ensuing year unless the contract is terminated by majority action of the board or a new contract, mutually agreed to by the teacher and the board superseded the old contract.

According to the present study, only 2.0 percent of the total turnover in high school districts of the state is due to failure of the board to take any action on renewal of the contract and 1.3 percent to failure of the contract to be renewed because of a tie vote among members of the board. Under the new law, then, only 3.3 percent of the teachers who left their positions in 1936-37 would have been protected. However, the indirect effects of the law are of much greater importance, for reports from throughout the state indicate that the law has stimulated boards of education to be more business-like in contractual relations with teachers. They have been more punctual in renewing contracts. The law shifts the contractual relations from one of a positive majority action to secure re-election to one of majority action for dismissal. The timid board member is forced to face the issue squarely, and it is evident that he will hesitate to vote for dismissal unless he can justify his action before the citizens. Under the old law, the board could engage in a game of "freeze-out" with the teacher and make conditions so unpleasant that the teacher would resign in disgust.

SUMMARY

1. Rate of turnover varies inversely with the size of the school system.
2. High school teachers are decidedly less stable than any other group within the profession.
3. Involuntary withdrawal accounts for only one-fourth of teacher turnover.
4. Superintendents are the most stable group within the profession, but have the highest percentage of turnover because of dismissal.
5. The four factors which account for almost ninety percent of all turnover are (a) transfer to a teaching position in another system, (b) dismissal or attendant factors, (c) marriage, and (4) transfer to another occupation.

RIGHTS OF TEACHERS UNDER TENURE LAWS

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Editor's note: Teacher Tenure is a matter of very general concern both within and without the profession. The author presents a scholarly review of court decisions relating to many aspects of this important legislation.

IN a democracy, legislation should represent a degree of crystallization of public opinion on issues on which the general public is informed and about which it is concerned. On the other hand, many of our laws are conceived by pressure groups and placed upon our statute books through shrewd legislative maneuvering involving a high degree of "log-rolling." Between these two extremes there are measures of an experimental nature, which are formulated by experts and calculated to improve or alleviate present conditions. These propositions the public will accept if they are supported by effective and valid publicity.

In which of these three categories teacher tenure legislation should be placed, will depend very largely upon the viewpoint of the individual or group, expressing an opinion. No doubt the three groups to be considered are: 1) the body of approximately a million American public school teachers; 2) the school board members, a miscellaneous and somewhat heterogenous group comprising, perhaps, at least another million of United States citizens; and 3) the general public. That the second group of school officials is more apt to represent the general public opinion than the body of teachers, may be set up as a fairly obvious assertion. All in all, however, it may be contended in these days of genuine interest in social legislation of various kinds, that teacher tenure properly belongs to that group of experimental measures formulated by experts to alleviate present conditions based upon fundamental principles to which the public is truly sympathetic, and to which it will give its support if fully informed.

That teacher tenure is still an issue was fully demonstrated by the most recent study of the Committee on Tenure of the National Education Association based on "opinionnaires" received from some 500 superintendents and 100 board members representing a good sampling.[1] The returns revealed some interesting data. A few of the more important

[1] National Education Association Committee on Tenure: "Opinions on Tenure: School Board Members and Superintendents," (May, 1939).

facts will be listed: (a) The greatest degree of approval of tenure, both on the part of superintendents and board members as well, comes from the states in which tenure has been given a fair trial. Ninety-four percent of all of the superintendents made favorable replies, but only 48 percent of all the board members did so. (b) Tenure on the basis of general state legislation is preferred by 90 percent of the superintendents and by 44 percent of the board members. Some 29 percent of the total replies from both groups, however, approve of local option, and 33 percent believe that local voters should be permitted to discontinue tenure requirements if the plan is found to be locally undesirable. (c) The largest degree of disapproval came from board members in districts varying in population from 5,000 to 10,000. This is extremely interesting, as it is probably in communities of this size that the median American citizen is domiciled. (d) The issues on which disagreement was most pointed were three in number: 1) the probationary period, 2) the status of the woman married teacher, 3) the continued professional improvement of teachers under tenure.

In order that these three issues last mentioned may be clearly understood it is necessary to call attention to the varying provisions of the tenure laws on the statute books of the different states. Up to about 1910, the date of the passage of the New Jersey tenure law which was practically state-wide in its application, most of the tenure acts were permissive, or optional, or made applicable only to the larger cities. Under these conditions there was little public disaffection and the litigation that arose dealt mostly with the interpretation of the statutes relative to their administration. By 1937 teacher tenure had been extended to a state-wide basis in at least thirteen states, and tenure as defined, meant permanent or indefinite service terminated only for cause, which was quite clearly defined in the act itself, or in the school code of the state. Among the causes most frequently mentioned are: incompetence, insubordination, immorality, inefficiency, neglect of duty, physical or mental disability, intemperance, cruelty, sedition, disloyalty to the flag, substantial decrease in the number of pupils due to natural causes, etc.

Generally speaking, teachers attain tenure in two ways: 1) By the continuing contract provision; and 2) after a period of probation of from one to five years. The continuing contract plan provides that unless the board votes to set aside the teacher's employment status for reasons clearly defined, usually by statute, the contract continues in effect subject to general administrative provisions, such as certification, salary sched-

ule, rules and regulations of the board held valid, etc. Among the states that follow modifications of the continuing contract are: Pennsylvania,[2] Nebraska,[3] Montana, Nevada,[4] and Minnesota.[5] The second type of legislation, that is, tenure after a probationary period, is most common. States having modifications of this plan are: California, Colorado, Louisiana, Maryland, Massachusetts, New Jersey, New York, and Wisconsin.[6]

Where tenure follows a probationary period it goes into effect automatically at the expiration of the time specified, as in Wisconsin, or upon re-employment following the period, as in Indiana, New Jersey, New York, etc. When the terms of the statute have been complied with teacher tenure becomes indefinite, or permanent, and a teacher can be dismissed only for cause. Cause may be clearly specified by statute as in Indiana, New Jersey, etc., or left to general or judicial interpretation, as in Wisconsin. Lack of specific definition, as usually construed by the courts, widens the discretion of the local board to which is left the determination of what constitutes cause, subject to the judicial interpretation. Before a teacher may be legally dismissed he is usually given the right of notice and hearing. Hearings are held within a period usually specified by law under prescribed procedures, which define: degree of publicity, nature and form of evidence submitted, and general definitions of quasi-judicial practices to be followed. In some states like Wisconsin, the law states: 1) that the decision of the board shall be final, 2) or the statute may specify the steps to be taken in case of appeal, or 3) the law may be silent as to the finality of the board's decision. Pennsylvania provides for appeal to the County Court of Common Pleas within 30 days; in Michigan[7] as in New York, appeal must be filed with the State Tenure Commission; California requires hearing in County Superior Court before three referees appointed by the court;[8] Indiana and Massachusetts have no definite statement relative to the finality of the board's action. Whether the statement as to finality is silent or specific, the rulings of the courts are practically unanimous that board decisions are always subject to court review, usually on writ of certiorari.[9]

[2] Act of General Assembly No. 52, Commonwealth of Pennsylvania 1937.
[3] Nebraska Legislative Bill No. 212 (1937)
[4] N. E. A. Research Bulletin, Vol. 14, No. 4, pp. 172-73.
[5] State of Minnesota H. F. No. 404.
[6] Wisconsin Session Laws (1937), Chap. 374.
[7] State of Michigan Bill No. 6, 59th Legislature, 1937 Extra Session.
[8] California Teacher Tenure Law, Chap. 7, Art. 1, Sec. 5.653.
[9] State ex rel. Waukesha School Board v. Thayer, 41 N. W. 1014.

It may be regarded as a fundamental principle that laws exist primarily to safeguard the rights of the individual. This includes the right to bring suit and to seek redress, in a democracy, in certain cases, even against the sovereign state itself, or its agents, the various school districts, or its public officers. Consequently a sound tenure law should be so worded that it may enable the teacher to secure or enforce his tenure rights. Similarly, as the contract is a bi-lateral pact, it must also protect the benefits accruing to the public. Teachers, are therefore, equally subject to suit for breach of contract. Suits of this kind are not common as yet, largely due no doubt to the difficulty of securing proper remedy. Usually a suit for damages is quite futile against the average teacher and the principle of compelling specific performance is not very advisable or enforceable. Nevertheless, it is gratifying to note, as reported in the N. E. A. study already referred to, that tenure has not only improved the quality of the body of teachers, as reflected by personal factors and more adequate training, but has also improved the stability of the force as shown by longer terms of service and less flitting about from system to system. The latter point is also borne out by a former study of Gilbert L. Betts.[10]

Questions have been raised as to the tendency of tenure legislation to result in the retention of teachers who have become inefficient through indifference, laziness, professional atrophy, senility, or perhaps because of conflicting interests set up through ventures in marriage, business, or politics. It is extremely difficult, if not impossible, to show that any such onset of teaching incompetence is a logical outcome of tenure, or even directly related to it. The law usually provides for dismissal *for cause* regardless of its source or inception. If the prescribed procedure for dismissal is too involved there may be cases of continuance of incompetents. The fault, however, is not attributable to the principle of tenure, but to the faulty procedure for dismissal and to administrative inefficiency. Hence the remedy would seem to lie in improvement along these lines and not in repeal of the tenure laws. It must be borne in mind that legally the supervisory powers of school officials are just as enforceable in the case of tenure teachers as toward non-tenure teachers. There is no reason for continuing teachers in service whose work would

[10] Betts, Gilbert L. "Influence of Teacher Tenure Laws on Supply and Demand," *Journal of Educational Research*, XXVIII (October, November, 1934), pp. 118-31; 175-86.

constantly supply objective evidence of inefficiency which would be admitted before any court of justice. Surely the techniques and instruments of supervision developed through educational research are adequate for the protection of the public interest in such respects.

Even if such safeguards were to fail, the power of the state to revoke all life certificates and replace them with provisional or short-term licenses renewable from time to time under conditions prescribed by the sovereign authority of the state, must remain as its unquestionable plenary power. In the light of all the above-named measures there seems to be no good reason why tenure rights subject to subsequent modification by legislation but safe from out and out repeal, may not be granted permanently to teachers. *What the principles of law and judicial practice relative to the maintenance of the tenure status once granted actually are,* will be the problem to be treated in the remaining part of this study.

Many interested parties: teachers, boards of education, and the general public, are greatly concerned about the effects that would follow logically and legally from the repeal of the teacher tenure act, especially one that is state-wide in its application. To understand this problem fully and clearly, several propositions must be carefully considered and analyzed. *First,* among these is the right of the sovereign state to change its mind, which it may manifest by rescinding or repealing legislation to take effect after passage, *in denying the further extension of tenure.* This, no well-informed individual will question. To refuse hereafter to grant permanent status to all teachers *at present in the probationary class* is wholly within the legislative discretion. *Second,* a state may definitely define under what conditions and limitations teacher tenure is to be exercised. It may put tenure on a *contractual basis,* or it may put it upon a strictly *legislative basis.* The State of Indiana granted tenure on the basis of contract in the following terms:

> "Any person who has served, or who shall serve under contract as a teacher in any school corporation in the State of Indiana for five or more successive years, and who shall hereafter enter into a teacher's contract for further service with such corporation, shall thereupon become a permanent teacher of such school corporation. . . . Upon the expiration of any contract between such school corporation and a permanent teacher, such contract shall be deemed to continue in effect for an indefinite period and shall be known as an indefinite contract."[11]

[11] Indiana Statutes, Supp., 1929, Sec. 6967.1.

On the other hand, California in the statement of its Teacher Tenure Law, as amended in 1937, specifies as follows:

> "All employments under the provisions of this part shall be subordinate to the right of the legislature to amend or repeal this part or any provision or provisions thereof, at any time, and nothing herein contained shall ever be held, deemed, or construed to confer upon any person employed pursuant to the provisions hereof a contract which will be impaired by the amendment or repeal of this part or any provision or provisions thereof."[12]

Clearly, according to the above, the California legislature may at any time limit, or even terminate permanent tenure extended since 1937. In Wisconsin the Teacher Tenure Act is not so directly contractual in form as the Indiana Act nor so definitely limited as the California Statute. What then is the nature of the tenure rights conferred on the teachers who have attained tenure under the law of this state, or of any state having similar provisions?

In order to answer this question it is necessary to examine the exact wording of the law and to determine how this is to be construed on the basis of applicable court decisions. This may be done, first, on the basis of related court cases in that state, and second, by following ruling decisions in other states, and also those of the United States Supreme Court. To illustrate, the Wisconsin law was published under the caption: "Security in Employment for Teachers." Quoting from the law:

> "The term 'teacher' as used in this section shall mean and include any person who holds a teacher's certificate and whose legal employment requires such certificate."[13]

This is followed by a statement designating boards or agencies to whom the act applies with reference to the statutes upon which the employing power is based. The law then states further:

> "All employment of teachers as defined in sub-section (1) of this section shall be on probation, and after continuous and successful probation for five years in the same school system or school, either before or after taking effect of this section, such employment shall be permanent during efficiency and good behavior and until discharge for cause."

Under such wording of the law, the question, therefore, resolves itself upon this: Does permanent tenure rest upon vested rights in contract, or merely upon legislative fiat? The first approach to this answer must

[12] California School Code (1937) Part III, Chap. 1, Sec. 5406.
[13] Wisconsin Statutes (1937), Chap. 39, Sec. 40.

be based upon the legal status of the teacher. Were it that of a public officer, he could have no vested right in his tenure of employment and repeal of tenure rights would immediately result in the termination of his so-called permanent tenure.

The legal status of a teacher, however, is not that of a public officer, as clearly brought out in a well-known Wisconsin case, O'Neil v. Blied, which has been widely accepted as a ruling case:

> "A teacher whose services are to be paid for by the state school fund is not a public officer, and his valid contracts cannot lawfully be destroyed or impaired by subsequent legislation, as such contracts are within the protection of the state and federal constitutions prohibiting passage of laws impairing the obligation of contracts. A teacher stands in a contract relation as distinguished from the tenure or holding of a public officer."[14]

In Sieb v. Racine, an earlier Wisconsin case, the same status was held to apply also to the city superintendent of schools.[15] This broad definition of "teacher" as including the superintendent has not been accepted in all of the states. Moreover, the state legislature may continue formally to recognize the contractual status of tenure teachers, for frequently the law requiring written contracts for the employment of teachers has been held to apply even to tenure teachers. Neither does the continuance of written contracts in any way affect or limit the validity of tenure, according to an Indiana case.[16] Again in a citation from a decision by a California Supreme Court:

> "The relation remains contractual after the teacher has under the provisions of the Teacher Tenure Law become a permanent teacher."[17]

It is therefore well established that generally a teacher bases his rights on contract unless the statute specifically states otherwise, as in the amended California Act of 1937, which is not retroactive. Contractual rights are vested rights and cannot be affected by subsequent legislation, as provided by the federal constitution: "No state shall pass any laws impairing the obligation of contracts."[18] It may be argued that any such contractual rights may be terminated at the end of every school year according to the terms of the teacher's usual contract. This is not

[14] State ex rel. O'Neil v. Blied et al. 206 N. W. 213.
[15] Sieb v. Racine, 176 Wis. 617.
[16] Black v. Indianapolis, 187 N. E. 393.
[17] Martin v. Fischer (Cal.), 29 Pac. 276.
[18] U. S. Constitution, Art. I, Sec. 10.

tenable, as in many of our states city superintendents may be employed for at least three years, and in Wisconsin and several other states, there is no statement that a teacher's contract is necessarily limited to one year. Furthermore, the sovereign state, as in the Wisconsin Tenure Act, may specify that for teachers under tenure "employment shall be permanent during efficiency and good behavior and until discharge for cause." Similar statements occur in the Indiana and New Jersey laws. There is nothing in these statements that the right of tenure exists at the mere caprice of the legislature.

Next, it must be borne in mind that certain provisions of contracts resting on legislative authority *are subject to modification* on the basis of the *police power* of a sovereign state; for a sovereign may not grant rights and privileges that will unduly limit its own sovereignty. It cannot be held validly that the granting of permanent tenure to teachers limits the state's police power in contravention of public policy. At least the decisions of the Wisconsin Supreme Court and of the United States Supreme Court have not taken this view. In a Milwaukee case under a statute defining tenure for cities of the first class, the relator, Alice C. Nyberg, was ruled to have become permanently employed and that her status as a tenure teacher could be abrogated by the board only in the manner prescribed by law: "That the status of one permanently employed as a teacher under such a system and with rights so fixed cannot be impaired by subsequent legislation."[19] as previously held in State v Blied, already cited.

That permanent tenure under the Wisconsin law of 1937 was to be real "security in employment" on the status recognized in the Nyberg decision may also be gleaned from paragraph (4) of the act which reads: "The provisions of this section shall not apply to teachers having civil service status."[20] Teachers under civil service have therefore an entirely different status and enjoy only those rights conferred on them by statute and such rights or privileges may be terminated by the repeal of the statute. Anyone who reads the papers at all these days is familiar with legislative ravages upon civil service employees to make way for hungry political cohorts. It is plain that it was the intent of the legislature to protect tenure teachers from such onslaughts; their rights are on an entirely different basis. This doctrine of tenure based on vested rights in

[19] State ex rel. Nyberg v. School Directors, 209 N. W. 683.
[20] Wisconsin Statutes 39.40 (4).

contract is well supported by decisions in other states. In California certain sections of the earlier tenure law were repealed removing districts with less than 850 pupils in average daily attendance from the application of the law. This precipitated the question as to the status of teachers in such districts who had already attained tenure. The court upheld their tenure status and ruled that the rights they had attained before the repeal as permanent teachers remained unchanged.[21] In a most remarkable case closely similar to those already mentioned, the Indiana case, State v. Brand, the Indiana Supreme Court held:

> "That a teacher acquired no contractual right to remain in employment from year to year inasmuch as the tenure statute was only intended as a limitation on the plenary power of local school officials to cancel contracts and was not intended as a limitation upon the power of future legislatures to change the law respecting teachers and their tenure."[22]

This ruling is in direct opposition to the doctrine advanced in the Wisconsin and California cases. In this decision, however, Justice Treanor, a jurist of national reputation, entered a strong dissenting opinion stating:

> "It would be an absolute injustice to abolish with a law all the effects which it produced. . . . One engaged in teaching in this state and whose services are to be paid for in whole or in part by the state school fund is not a public officer, and his valid contracts cannot be impaired by subsequent legislation."

It is evident that Justice Treanor's reasoning followed closely that of the Wisconsin court in the Nyberg case. The Brand case was finally appealed to the United States Supreme Court. The majority decision was overruled and the dissenting opinion of Judge Treanor was upheld by a 7 to 1 decision, only Justice Hugo L. Black dissenting. Justice Roberts wrote the opinion from which the following is quoted:

> "The causes of cancellation provided in the Act of 1927 and the retention of the system of indefinite contracts in all municipalities except townships, by the Act of 1933 are persuasive that the repeal of the earlier act by the later was not an exercise of the police power for the attainment of ends to which its exercise may properly be directed."[23]

[21] Chambers v. Davis et al, 22 Pac. (2d) 27.
[22] State v. Brand, 5 N. E. (2d) 531.
[23] State of Indiana ex rel. Anderson v. Brand, 303 U. S. 95.

The Justice also called attention to the repetition of the word, "contract" in the act, a plausible admission that the legislature recognized the contractual status of the tenure teacher. In two other Indiana cases subsequently brought, the high court handed down virtually the same ruling.

Is there assurance that the federal court would decide similarly in cases brought from California or Wisconsin? It is true that the wording of the Indiana law is somewhat more specific on the contractual status of the tenure teacher. Nevertheless, as has been pointed out, this is clearly implied and backed up by state rulings, as shown by the Blied and Nyberg cases in Wisconsin, and in Martin v. Fischer in California, as previously cited. It has also been shown that tenure might be granted without vesting teachers with a permanent contractual status, if the law states so specifically as does the amended California Act of 1937. It is equally true that there may be laws which amount to propositions on the part of the state, which if accepted by individuals will become binding contracts, as in the case of bounty laws, etc.[24, 25] Technically it may be pointed out that it is sometimes hard to distinguish what the legislature intends to become a contract and what not. The answer lies in the *wording of the law and the court's interpretation of it.* The law must be specific and capable of accurate interpretation. To get this clearly it may be well to examine the dissent of Justice Black in the Brand case. In challenging the contractual rights of teachers under tenure, he based his opinion on a previous and somewhat similar ruling in the New Jersey Phelps case, which is frequently quoted. This contention must be closely scrutinized. To quote from Justice Black's dissent:

> "I believe that the decision on the New Jersey appeal and the majority decision on the Indiana appeal are irreconcilable. . . . The record does not disclose beyond a reasonable doubt that Indiana by the Teachers' Tenure Act of 1927 surrendered its sovereign governmental right to change and alter at will legislative policy related to the public welfare, or that its legislature had power to do so."

It has already been admitted that the sovereign state may always change its policies under the constitution, except that it cannot pass laws impairing the obligation of its contracts already entered into or made. All will depend on how far a state may go in modifying or changing its obligations *through the proper exercise of its police power.*

[24] Hall v. Wisconsin, 103 U. S. 5.
[25] People v. Auditor General, 9 Mich. 326.

The New Jersey case, Phelps v. Board of Education, West New York,[26] may be summarized as follows: The New Jersey Tenure Act of 1910 provided that: "No principal or teacher shall be dismissed or subjected to reduction of salary in said school district, except for inefficiency, incapacity, or conduct unbecoming to a teacher, or other just cause."[27] In 1933 under the pinch of the nation-wide depression the legislature repealed the clause relating to the reduction of salaries of tenure teachers and enacted a law authorizing a decrease in salaries of all teachers without discriminations against individual teachers or groups of teachers. This may be designated as a valid exercise of the state's police power to modify its obligations in the interests of public policy. Certainly it would be unwise to wreck the public credit of the commonwealth for the sake of keeping intact a salary schedule based on entirely different economic conditions. Nevertheless, this individual, Phelps, insisted on his pre-depression salary status and the case finally reached the United States Supreme Court, which upheld the New Jersey court and the constitutionality of the law. A similar case, an Illinois case, Dodge v. Board of Education, Chicago, is often quoted.[28] This was also a by-product of the depression, as the State of Illinois felt itself compelled to reduce the amounts payable under the pension law which were fixed by statute. Dodge appealed his case to the Illinois Supreme Court which ruled against his contention. This decision was later affirmed by the United States Supreme Court. Here we have another clear case of warranted modification of contracts on the basis of proper exercise of the state's police power.

Teacher tenure rights, though based on contractual status, are not in the interest of a special class, but are based on sound public policy.[29] It is, therefore, hard to conceive of a case calling for the repeal of the *tenure of service* of teachers in the public interest through the exercise of the police power of the state. Alterations and modifications of the act, however, may be based on public need arising out of conditions not foreseen when the act was passed. As a further illustration of this: Would the setting of an age-limit, such as termination of permanent

[26] Phelps v. Board of Education, West New York, 300 U. S. 319.
[27] New Jersey Comp. Statutes (1910), Par. 106a.
[28] Dodge v. Board of Education, Chicago, 5 N. E. (2d) 84; 58 S. Ct. 98.
[29] 110 A. L. R. 791.

tenure at the age of sixty-five, be constitutionally applicable to tenure teachers who had attained tenure prior to the change? The answer must be in the affirmative. It would not be a major change in the act; it would define the meaning of "permanent," and would be in the public interest, as it is conceivable that the efficiency of the schools might be decreased by the presence of too many aged teachers. Such a modification would be entirely within the proper exercise of the police power. The doctrine covering this is clearly expressed by this quotation from a United States Supreme Court ruling:

> "Though the obligation of contracts must yield to a proper exercise of the police power, and vested rights cannot inhibit the proper exercise of the power, it must be exercised for an end, which is in fact public, and the means adopted must be reasonable, adapted to the accomplishment of that end and must not be arbitrary or oppressive."[30]

A recent decision by the Oregon Supreme Court, May 10, 1938, also follows this reasoning:

> "Any vested contractual rights acquired by teachers under the law were required to yield to a different educational policy determined through proper exercise of police power in the enactment of the 1935 teachers' tenure law providing for compulsory retirement of teachers who have reached the age of sixty-five years."[31]

The question has been raised as to whether this doctrine could be applied in limiting tenure to female teachers on the basis of marriage. In the absence of a statute governing this, most of the decisions of the state courts have been negative. Thus far no state has tried to legislate on this issue. It is interesting to speculate what the attitude of the courts might be if such legislation is undertaken.

The Phelps case, already cited, represents the extreme point to which the exercise of the state's police power could be stretched without violating the vested rights of the individual. To quote:

> "The statute creates a mandate of the legislature compelling boards of education to re-employ teachers on tenure under conditions fixed by the legislature. . . . The teacher may terminate the right to re-employment at the end of any year, but the board is without authority to terminate the teacher's right to re-employment except in the manner provided for in the statute."[32]

[30] Treagle v. Homestead Assn. 297 U. S. 189.
[31] Campbell v. Aldrich, 79 Pac. (2d) 257.
[32] Sixth Yearbook of School Law, p. 14 (American Council of Education).

It is hardly conceivable at this time that the exercise of the police power of the State of Wisconsin, or any other state with a tenure law similarly drawn, could be extended to wipe out every vestige of the tenure rights acquired by statute. The wording of the Wisconsin law is much more in support of teachers' vested rights by virtue of their contractual status than can be gleaned from a careful reading of the New Jersey law. Yet in any case it may be argued that tenure in all states, unless it is specifically stated otherwise, must rest on contractual status, as it is usually definitely stated that employment of teachers must be on the basis of contract; and in most states this contract must be in writing and made out according to a prescribed form. Consequently, the conclusion according to well established principles of constitutional law, must be that: 1) a state legislature may repeal the tenure act and subsequently deny tenure to teachers of probationary status; 2) it may modify the provisions of the law in their application to teachers who are now under tenure; but 3) it may not arbitrarily abrogate a teacher's contractual right to tenure after he has complied with the conditions clearly specified in the statute itself.

In conclusion, one further consideration must be included in this study: What is the teacher's remedy if his tenure rights are infringed upon? The legal principle most generally followed is that if the damage is merely pecuniary, suits brought should be in *assumpsit*, for which the remedy is merely in terms of money damages. If more is involved, however, as indicated by Judge Treanor, the effects produced by the contractual status, the rights of security of position, or the effects upon retirement rights, the teacher may insist upon a more equitable remedy. Most of our state courts, therefore, have granted the teacher the right of compelling re-instatement by mandamus. Recently the Supreme Court of Indiana chose to disregard this right of mandamus. Miss Brand after winning her case in the United States Supreme Court, sought re-instatement by mandamus, which the court denied, since her rights they said, are held to rest on contract, there remained only two remedies: (a) damages under suit in assumpsit, or (b) suit for a decree of specific performance which would involve re-instatement.[33] Accordingly in a more recent Indiana case,[34] a teacher forced out of his position by repeal of tenure as applied to township systems, after some years of unemploy-

[33] State ex rel. Anderson v. Brand, 13 N. E. (2d) 955.
[34] Patoka School Township v. Ashby, 14 N. E. (2d) 764.

ment, was enabled to collect $7,187.70 on the basis of an annual salary of $1,008.80. Hence in seeking the proper remedy the plaintiff must be familiar with the laws and judicial practices as established or recognized in the state in which suit is brought.

EDITORIAL

FUNCTIONAL HISTORY OF EDUCATION

History of education was a relatively frequent requirement in the early teacher-training programs of this country. In the early days of graduate work in education, the historical or philosophical thesis was popular. All too commonly both the course of instruction and thesis consisted of a mass of historical facts without functional application to social issues or to the activities and problems of educational workers. During the second and third decades of the present century other courses and tools of research (tests, surveys, experiments, etc.) made heavy claims on the attention of students and investigators. Of late there is evidence to indicate that a new type of history has regained some of the lost ground. Every school system and school, each subject and activity, has its own story of evolution and development. Little of this history has been written. The following elementary suggestions are made to the beginning graduate student and to the field worker with limited training in historical research.

History is an integrated narrative of past events, representing a critical search for the whole truth, with a field of inquiry as broad as the human past and life itself. Good history is both science and art; sound research is science and a masterful style of narration is art. The "seamless web" of history should be more than an almanac or chronicle of the unique events of the past; it has obligations for functional use by way of applying its data to current issues and problems.

For collection of data, documents and remains are the chief primary sources, the first witnesses to a fact and therefore the only solid bases for historical research, although classifications of sources have been broadened within recent years. In the case of secondary sources, more than one mind has come between the historical event and the user of the sources. To make satisfactory progress in answering historical questions, it is necessary to collect material by means of a well arranged note system.

The sources are subjected to external and internal criticism. External criticism is concerned with the genuineness of the document as such, and deals with data relating to form and appearance rather than meaning of

contents. Internal criticism deals with the meaning and trustworthiness of statements within the document, that is, weighs the testimony of the document in relation to the truth. External criticism makes use of certain auxiliary sciences and a variety of procedures in dealing with forgeries and hoaxes, inventions and distortions, authorship and time, borrowings, etc. Internal criticism seeks to determine the literal meaning and the real meaning of statements, the competence of the observer, the truthfulness and honesty of the observer or author, etc.

Historical composition is a synthetic and constructive process which involves the mechanical problem of documentation, the logical problem of selection and arrangement of topics and subtopics, and the philosophical problem of interpretation. An appropriate combination of the chronological and topical plans for arrangement of topics and materials is recommended. Few works in history have been directly touched by one of the broad philosophies or theories of history, such as the evolutionary hypothesis or the rhythm-philosophy (cycle theory). Specific schools of historical interpretation, such as economic determinism, permit a pragmatic test, through use of historical materials, and are of more general interest to writers and users of history, although many of the best historical works have been written according to the individual bent of the author rather than in keeping with some special interpretation or school of thought. The development of a newer type of history, which is eclectic in approach and interpretation, necessarily depends on the contributions of many sciences for gathering and interpreting evidence and for training its workers.

Historical writing and interpretation include a variety of special problems. Only when a perplexing question has been identified and correctly stated does profitable study of history begin. Inductive reasoning is, of course, the procedure open to the historian, in making penetrating inductive inferences from known facts which offer only a partial explanation. In turn, the superimposing of the general explanatory concept upon the facts or the testing of the working hypothesis represents a deductive process. As a rule, multiple causation is the explanation of any important historical event. The problem of historical perspective represents great difficulties because of tendencies to evaluate events and personages, distant in time or space, according to the standards of our own time and culture. Few histories of distinction lack a thesis or principle of synthesis, such as the effect of the frontier on American life and character. The literary aspects of historical writing include consideration

of mastery of materials, the working outline, the principle of progression, emphasis on major elements, and the art of narration and dramatization.

The numerous historical works available in a variety of social and scientific fields suggest that the decade of the nineteen thirties, which began as a period of world-wide economic and social disturbance and ended in another World War, may have turned to a newer type of history as an ally of the scientific movement, hoping thereby to solve at least in part the staggering problems of human maladjustment.

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REVIEWS

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SHOTWELL, JAMES T. *The History of History.* Vol. I (New York: Columbia University Press, 1939), pp. xii + 407. $3.75.

ELMER, MANUEL CONRAD. *Social Research* (New York: Prentice-Hall, Inc., 1939), pp. xvi + 522. $3.00.

YOUNG, PAULINE V., and SCHMID, CALVIN F. *Scientific Social Surveys and Research* (New York: Prentice-Hall, Inc., 1939), pp. xxix + 619. $3.00.

BUROS, OSCAR KRISEN, Editor. *The 1938 Mental Measurements Yearbook* (New Brunswick, New Jersey: Rutgers University Press, 1938), pp. xiv + 415. $3.00.

Although the social sciences have developed relatively late, as compared with the physical sciences, partly because of the complexity of the social problems involved, the factors of prejudice or bias present in dealing with human relationships, and the lack of adequate problem-solving techniques, rapid progress has been made within the past score of years in providing a large body of social research, as well as a considerable number of treatises on the methodology of scientific investigation. These books on methods of research have appeared with increasing frequency during the past decade.

Books on historiography possess major significance for students of education, since the story of the human past includes many important areas of social experience other than the history of politics or military exploits; for example, the evolution of culture, ideas, institutions, law, religion, literature, art, industry, technology, science, philosophy, psychology, anthropology, sociology, and education itself. It probably is more than a coincidence that at least three recent attempts have been made to review large blocks of historical writing—Shotwell's new book, Barnes' *History of Historical Writing* (University of Oklahoma Press, 1937), and Kraus' *History of American History* (Farrar and Rinehart, 1937). Shotwell's authoritative volume is a revised edition of his *Introduction to the History of History.* After a group of introductory chapters on the definition and scope of history, interpretation, prehistory, books and writing, measuring of time, Egyptian annals, and Babylonian, Assyrian, and Persian records, he evaluates in detail the contributions to Jewish, Greek, and Roman historical writing. A final series of chapters deals with Christianity and history. It is planned at a later date to issue a second volume which will cover the period from early Christian times to the present. Both Shotwell and Kraus, by virtue of covering a limited period of time, have been able to give adequate treatment to the historical work represented, whereas Barnes' attempt to deal with the entire sweep of history has given to certain sections of his book the appearance of a running bibliography.

The Elmer and Young volumes,

although published in the same series (Prentice-Hall Sociology Series), seem to cover much the same ground. Both deal with social research in terms of: trends, definition and characterization, sources of information, the social survey, observation, questionnaire and schedule, scales, interview, historical method, case study, life history, regional studies, culture groups, statistical techniques, and organization and analysis of data. Elmer includes a chapter on experimentation, which is hardly to be expected in the Young volume in view of the latter's title and emphasis on social surveys. The helpfulness for workers in education is suggested by the fact that the topics treated include most of those found in a discussion of the methodology of educational research, although the illustrations and applications are chiefly in the field of sociology. Both books have limitations with respect to organization of the content into the sequential steps of problem solving with clear-cut differentiation between major patterns of research, data collecting devices, and techniques for analysis of data, although the Young volume is superior in this particular.

The three books characterized in the preceding paragraphs may be considered in part as guides to research studies and scientific method in the areas represented —Shotwell in historical writing, and Elmer and Young in sociology. Buros has performed an outstanding service to the field of measurement in his guide to mental measurements, including aptitude, educational, intelligence, personality, and psychological tests, questionnaires, and rating scales. The original reviews of standard tests of the two or three years preceding were prepared by technicians of recognized standing in their respective fields. The continuation of such an annual service should have a salutary effect on both authors and publishers of standard tests. Sections of the yearbook are devoted to quotations from published reviews of 1937 and 1938 books on mental measurements, and of 1933-38 books on research and statistical methodology. Reports on regional testing programs are listed. Indexes of titles and names are provided. Even though in certain instances the criticisms of the tests may be of uneven value, and in some cases reviews of books are questionable guides for evaluation, it is hoped that this third yearbook of the series, in its expanded form, may be continued annually for the valuable service it renders to users and students of measurement and research instruments.

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MUNN, NORMAN L. *Psychological Development: An Introduction to Genetic Psychology* (Boston: Houghton Mifflin Company, 1938), pp. xx + 582. $3.25.

In this text genetic psychology, heretofore somewhat faltering in its ontogenesis and threatening to remain in an indeterminate embryonic state, attains particularity through definition and the operation of appropriate organizational principles. Simply and clearly Munn has indicated that genetic psychology is defined not by the uniqueness of its subject matter, materials or methods of investigation but by a view of behavior changes or manifestations in a developmental sequence.

Genetic psychology is, therefore, a term comprehending development not only through the phyla but also development throughout the behavior life history of the individual in any given animal form or species. Approximately one-fourth of the text is devoted to the phy-

ogenesis of behavior and the remaining three-fourths to human ontogenesis. This means that the major emphasis is upon the development of human behavior with the phylogenetic materials serving primarily as an introduction or setting for the body of the work.

The delimitation of genetic psychology from related fields is in most respects excellent. The characterization of child psychology as not necessarily ontogenetic is, however, open to serious question. For the reviewer, child psychology describes a segment of human developmental psychology. The fact that some writers refer to educational or child guidance procedures as "child psychology" may simply be an illustration of the misuse of a term. Indeed "genetic psychology," although generic, has frequently been employed as a synonym for one of its particulars. Munn, quite correctly, has not been bound by the latter unanalytical usage.

Our most serious dissent from the author's definition of genetic psychology arises in relation to his statement that it is eclectic. It is a common misconception that eclecticism is defined by the extensity of coverage or the inclusiveness of data or materials. Thus Munn asserts:

"Genetic psychology is . . . an eclectic field of investigation, gathering data which will help in the solution of its problems wherever such data are available. It serves as a point of focus, so to speak, for the genetically significant findings of all other fields of study. These fields are in themselves genetic when their problems are approached developmentally" (p. 12).

"Genetic psychology is eclectic, borrowing supplementary technological and factual material from the mathematical, physical, biological, and social sciences" (p. 13).

If the latter borrowing of methods and of experimental or analytical tools actually constituted eclecticism then all sciences by virtue of their use of mathematics would be eclectic and eclecticism as applied to genetic psychology would be non-differentiating or redundant.

The writer vacillates between the position that "description" and "explanation" are different processes and one in which "explanation" is seen, at least in regard to learning, as "description" of occurrences having a specific locus, namely, the nervous system. The following excerpts are illustrative of this uncertainty:

"The conditioned response theory does not *explain* learning. Like the theories already discussed, it indicates certain conditions under which learning occurs. It states, specifically, that the conditions requisite for learning are also those requisite for conditioning . . .

"An explanation of learning will be approximated whenever we discover its neural bases. As our quotation from Lashley indicated, a neural mechanism for learning has not yet been disclosed. If conditioned responses represent the fundamental processes of learning, one should ascertain their neural bases" (p. 255).

"One should keep in mind, furthermore, that the various theories of learning, including the conditioned response theory, merely *describe the conditions* under which learning occurs; no adequate 'explanation' of learning (or description in neural terms) has yet been offered" (p. 257).

"They *describe* certain conditions under which learning is exhibited; they do not, however, explain it. . . .Conditioned responses may form the basis of all learning. To identify learning with conditioning, however, explains neither

process. Explanation will be approximated when further research discloses the essential neural mechanisms for learning and conditioning'' (p. 258).

One may well ask whether it would not be simpler to merely affirm, concerning the change in behavior of an organism which we ascribe to learning, our ability to describe the stimulating or environmental situation and the initial behavior as contrasted with subsequent behavior and our present inability to describe the nature and exact site of alterations within the organism?

In the reviewer's opinion the talk of *final* answers in science smacks of a naiveté in historical perspective. Nothing is added to an otherwise admirable summing up of our present knowledge of the neonate by the affirmation that ''the final answer concerning the ontogenesis of such important functions as color vision, tone discrimination, olfaction, gustation, and pain is not yet apparent'' (p. 284).

This conception of *final* answers seems likewise to be operating in the author's criticisms of certain attempts to formulate laws or principles of development. It is one matter to be so enamored of a generalization as to ignore the existence of data not so subsumed, and it is something else again to deny the value of a generalization because it does not apparently apply to all developmental sequences. Surely both views err in regard to the role of generalizations in science.

Specific errors in fact or statements lacking evident factual support are illustrated by the following:

''Pratt (1934) also used the stabilimeter-polygraph technique to ascertain whether continued stimuation with a dim light would effect the activity of infants ranging in age from two to eleven days'' (p. 265).—The title of the article referred to is 'The Effects of Repeated Visual Stimulation upon the Activity of Newborn Infants.' 'Continued' and 'repeated' are not synonymous.

''Moreover, all of the types of overt behavior labeled *fear*, although they are quite diverse at times, possess the common characteristic of avoidance, flight, or the like'' (p. 419). Are we to interpret ''or the like'' as applying to the condition colloquially described as ''being scared stiff''?

''An individual becomes increasingly susceptible to social stimulation as he grows older'' (p. 472).—Some implications of this are probably not warranted in the light of the greater suggestibility of the child. Further it is not at all certain that social stimulation becomes more potent as one grows older.

Dennis, W., and Dennis, M. G. 1937, the reference listed on p. 531 should read Psych. Rec. and not Psych. Rev.

Questionable selection of references leading to identification of experimental techniques or theoretical formulations with the names mentioned are shown in the following:

1. There is no mention of Peiper as responsible for the capsule technique of investigating the thermal sensitivity of new born infants. The student will naturally identify the method with Crudden since only the latter's work is reviewed.

2. In regard to the law of effect Thorndike's formulations are approached historically but the critics are not so represented. Thus Tolman is credited with an analysis in terms of which ''the situation associated with the positive reaction becomes, upon repetition, a conditioned 'sign' for the elicitation of the response'' (p. 249) and the earlier and somewhat similar analysis by S. J. Holmes is not mentioned.

Again, it is difficult to reconcile the

full and uncritical account of Marquis' conditioning experiments upon the newborn infant with the relegation of Wenger's later and much more careful study to the position of a mere footnote. Nor can we see a justification for relating the Dockeray and Rice work on pain sensitivity of newborn infants and at the same time ignoring the superior experimental technique followed by Peiper.

Despite the space given in this review to items which appear to need criticism it would be a serious mistake for the reader to be prejudiced against the work as a whole. Indeed the merits of the work make the adverse criticism seem trivial and they are merely entered as an honest and critical appraisal. The selection and organization of materials is such as to place this text in a class by itself so far as genetic psychology is concerned. Any one charged with the offering of an advanced undergraduate or a graduate course in the field need not search further for an adequate and teachable reference text.

The treatment of the developmental stage of the neonate probably represents the most critical summary of the state of our knowledge of this period that has appeared in any text in genetic or in child psychology. It will therefore, commend itself to the individual contemplating experimental work in the early phases of human development.

The reviewer is especially pleased by the balanced view of the respective roles of heredity and environment in the development of behavior. He suggests the chapters on "Biological Foundations of Behavorial Development" and "The Phylogenesis of Unlearned Behavior" as required reading for any student of education inclined to exaggerate the potency of "nurture."

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JOHNSON, B. LAMAR, Editor. *What About Survey Courses* (New York: Henry Holt and Company, 1937), pp. xi + 377. $2.85.

This volume is a series of chapters contributed by various authors, each describing some aspect of the survey course problem. With varying degrees of clarity and definiteness, these contributors state the theory and practice regarding survey courses in various institutions. By this method, the editor has given a picture of the diversity of philosophy and practice concerning these courses in the United States.

The first three chapters deal with general aspects, such as the recent rapid growth in number of survey courses, the principal problems of survey courses as determined by a questionnaire, and a consideration of the various types of survey courses. The major section describes the general curriculum of survey courses offered by a dozen different institutions in the United States. This section is followed by a consideration of specific survey courses in several institutions — the survey course in Natural Sciences, in Social Sciences, and in Humanities. Several schools have introduced "composite" survey courses. Those described are: Northwestern's course in Contemporary Thought; the "Campus Course" of the University of Iowa; the survey courses of the New Jersey State Teachers College at Montclair; and the Blended Curriculum of Fenn College at Cleveland. The book concludes with one chapter on "Measurement and Evaluation" by Alvin C. Eurich.

The reader is struck with the great variety of opinions, beliefs, and practices regarding "survey courses." A few of these divergencies will be illustrated. Professor Eurich in the final chapter points out the necessity for a clear formulation of objectives. The necessity for

this caution is amply borne out in many of the previous chapters in which objectives are stated in extremely vague, glowing and general terms. We see that in some institutions the survey courses are compulsory; in others, the student may or may not take them as he sees fit. Some institutions offer survey courses for the freshmen; others feel that the student must have something to integrate before he takes such a course and hence offer these courses to seniors. Other institutions offer a survey course for each college year, one for freshmen, one for sophomores, another for juniors, and a final one for seniors. In some schools, all students take the survey courses; while in others, these courses are offered only to the middle group of students since it is felt that the superior student can spend his time more profitably while the inferior student will not learn much anyway. At Columbia College the faculty committee considering the question of survey courses unanimously decided that students whether planning to enter a profession, to become research workers, or to do neither, had the *same* needs as far as the survey work in social sciences was concerned; while a corresponding committee at Minnesota decided "it is obvious that the needs of the three groups for survey courses are quite different." In most schools the courses are directed by the faculty, but Fenn College is turning over the direction of the survey courses to a student committee. The completion of a college course is marked by the attainment of a certain level of achievement in the majority of the colleges, but at Michigan State Teachers College, the emphasis is quite explicitly against this. There each "field of learning represents a block of time (giving) . . . an opportunity for each individual to start where he is, to progress as rapidly as possible, and to achieve the maximum growth during the period of time." The evaluation difficulties presented by such a program are not mentioned.

The gravest deficiency revealed by the book is the lack of adequate methods for judging the success of the particular program adopted. Fully half of the colleges represented have no evaluation program under way. The criterion of success of one course is given as "the effect that it has in the lives of the students" which is determined apparently by "the scores of letters from former students." In one school, there is a central examining system; in another, the different instructors in a single course independently prepare and administer examinations; and in another, the students evaluate their own progress. Still other schools recognize the need for evaluation procedures but have not as yet instituted any. Where tests are administered, there are marked differences in the types of interpretation made. One investigator confidently reports marked improvement from the results of a testing program; another asserts that due to changes in students and objectives from time to time, any comparisons of test scores that might be made are meaningless.

The foregoing account is sufficient to indicate that this book raises a large number of questions and answers practically none. A careful study of such material should enable one to formulate the principal problems that arise in considering survey courses and then to work toward their solution. It is easy to state that different institutions are different and hence will have different solutions for parallel problems, but these differences should then be specifically stated so that one can see the reason for various solutions. To what extent do the diverse views and practices cited above reflect

differences of *opinion* among teachers? And to what extent do they reflect differences in the *situation* to which the various schools are adjusting? This book should provide interesting leads for the student of education who is seriously interested in survey courses. It indicates the need for a more explicit formulation of problems raised by survey courses and a systematic attack on these problems.

HAROLD GULLIKSEN
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SKINNER, CHARLES E., and LANGFITT, R. EMERSON, Editors. *An Introduction to Modern Education* (Boston: D. C. Heath and Company, 1937), pp. xv + 491. $2.80.

What is the Scope and Function of Introduction to Education?

There should be a substantial first-year course in education on the senior college level. Such a course should comprise a full year's work, containing the digested subject matter of some half dozen of the prevalent undergraduate courses—which it should displace—and should be as comprehensive and meaningful as the general courses in the natural and social sciences. Moreover, this introduction to education, as its title implies, should introduce the student to the study of education but without duplicating the data of more specialized courses that are to follow it. Lastly, such a course should be an integrated whole developed from data collected at first hand, rather than a *serium* presentation of unrelated topics on history of education, classroom management, methods, philosophy of education, etc. In other words, the course should lay the foundations for the study of education and should deal definitely, thoroughly, and finally with the matter which it offers.

Most colleges offer a course under this title, but the reviewer knows of none that has developed one of the breadth and depth of that here contemplated. Nevertheless, with the notoriously flimsy and superficial character of undergraduate courses in education in mind, he hazards the suggestion that something should be attempted along this line and that textbook writers should lead the way with substantial comprehensive treatises.

These animadversions were prompted by a perusal of the latest book of this classification to come to the reviewer's attention. This new book follows the general pattern of the conventional textbook in this field. The chapters deal respectively with topics that are later to be the themes of specialized courses in education. While the treatment of each chapter is necessarily brief, it is, nevertheless, quite long enough to duplicate parts of the specialized courses and thus take the edge off of the student's interest when he later comes to study them. Chapters V, VI, VII, and XIV offer materials that quite properly belong in an introductory course, as the reviewer conceives it, but even these topics may later be met within a course in educational sociology.

What has been said is more in condemnation of the type of course represented by this textbook than in criticism of the present volume. The individual chapters are capably written and the work, as a whole, is well organized and well edited, but as the volume is a compilation of the contributions of thirteen authors it is, of course, subject to the limitations of a coöperative endeavor. Unity has been achieved with difficulty and the same ideas crop out occasionally in different chapters, for example, *articulation*, pp. 51-54 and pp. 176-178; *historical data*, pp. 81-84, 183-186, and 416-423; also parts of Chapter XI seem to overlap

parts of Chapter XIII. It may be added that the treatment of certain topics seems to be quite mature for beginners.

Despite this criticism the book is well conceived, in the conventional sense of the word, and contains graphs and illustrations besides the usual teaching aids, bibliographies, questions, problems and "challenges."

STUART G. NOBLE
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STRANG, RUTH (with the assistance of ROSE, F. C.) *Problems in the Improvement of Reading in High School and College* (Lancaster: The Science Press, Published by the Author, 1938), 390 pp. $3.00.

The aim of this book is to furnish for teachers who daily come in contact with poor readers the information now available concerning reading problems in high school and college. Nature of reading abilities, vocabulary problems, reading problems including remedial work and appraisal of ability, case studies, materials, tests, and programs for improving comprehension are considered. It is convincingly argued that there should be reading training in high school and college as well as at the elementary levels.

The author has evaluated the materials and summarized the trends in a highly satisfactory manner. A few of the important points of emphasis may be listed: (1) An overemphasis upon speed of reading *per se* is possible. This may be avoided by using the term rate of comprehension instead of rate of reading since speed without comprehension is futile. (2) To be a good reader, a repertory of reading techniques is essential. Since successful performance depends upon adjusting to various types of reading situations, versatility and adaptability are marks of maturity in reading. (3) Training in reading yields satisfactory gains, desirable changes in attitudes and improved habits of concentration. (4) The listing and evaluation of materials and tests will be found very useful. (5) Direct observation of the student in the reading situation adds greatly to measurement results in diagnosis. (6) Individual diagnosis is necessary.

Certain criticisms may be offered: (1) An undue emphasis, not supported by experimental evidence, is placed upon physiological factors as determinants of reading disability and upon mechanical devices for diagnosis and remedial treatment. (2) Contrary to the author's statement (p. 207) there is little or no justification for photographing eye movements in clinical work. (3) On page 208 the author has misinterpreted the validity of eye movements in reading.

This book fills a need that has been present for some time. Furthermore, it is one of the finest treatises that has been written in the field of remedial reading. It will without doubt receive a hearty welcome.

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RESEARCH ABSTRACTS and BIBLIOGRAPHIES

Address all communications relative to research abstracts and bibliographies to A. S. Barr, University of Wisconsin, Madison, Wisconsin.

BULLETINS

ADE, LESTER K. *Educational Standards for Teachers in Pennsylvania*, Bulletin 154 (Harrisburg: Pennsylvania Department of Public Instruction, 1939), 114 pp.

This bulletin discusses three stages of teacher education, the philosophy of teacher education, the certification standards, and miscellaneous regulations.

ADE, LESTER K. *Quantitative Aspects of Experiencing in the Elementary School*, Bulletin 360 (Harrisburg: Pennsylvania Department of Public Instruction, 1939), 221 pp.

The author of this bulletin supplies a list of arithmetical experiences for elementary school pupils.

BOYER, PHILIP A., ET AL. "Pupil Personnel, Guidance, and Counseling," *Review of Educational Research*, IX (April, 1939), 252 pp.

This issue of the review presents summaries of research relative to characteristics of pupil population: elementary education, secondary education and higher education; school organization and classroom adjustment, including attendance, progress, marks, records and reports, individual differences, and special schools and classes; programs of guidance and counseling in secondary education, higher education and out-of-school and adult programs; techniques of guidance and counseling including tests, rating scales, the interview, personnel records, the autobiography and life history, case studies, mental hygiene counseling, the clinical method of guidance and group guidance.

CARLSON, WM. H. *The Development and Financial Support of Seven Western and Northwestern State University Libraries* (Berkeley: University of California Press, 1938), 106 pp.

The author discusses the area supporting the universities, the historical background, the financial support of the libraries, how they are governed, the people who work in them, the acquisition and preparation of library materials, and the books in the libraries. He includes a summary of conclusions and a bibliography.

CASSELS, JOHN M., and OTHERS. *Next Steps in Consumer Education*. Institute for Consumer Education (Los Angeles: Ward Ritchie Press, 1939), 189 pp.

This is a report of the proceedings of the National Conference on Consumer Education, and contains abstracts of speeches (with general conclusions) on the following topics: The challenge of consumer problems, How far can education solve consumer problems? Choosing, using and improving materials in the field, Meeting the needs of particular

consumer groups, How is consumer education related to other subjects?, and Interrelations of consumer education and marketing.

ESKRIDGE, T. J., JR. *Growth in Understanding of Geographic Terms in Grades IV to VII.* Duke University Studies in Education, Number 4 (Durham, N. C.: Duke University Press, 1939), 68 pp.

The author presents a survey of previous investigations and an outline of the procedure employed in his investigation, with a discussion of the factors in and principles of growth.

FERTSCH, L. M., ET AL. *The National Elementary Principal, Enriching the Curriculum for the Elementary-School Child.* Eighteenth Yearbook of the Department of Elementary School Principals, Vol. XVIII, No. 6 (Washington, D. C.: National Education Association, July, 1939), 704 pp.

The Eighteenth Yearbook of the Department of Elementary School Principals contains discussions of the nature and significance of curriculum enrichment, approaches to curriculum enrichment, making learning concrete and purposeful, developing appreciations and creative abilities, enrichment through school materials and equipment, making use of resources, measurement and guidance, and means of vitalizing the curriculum under various types of school organization.

FOSTER, CHARLES R., JR., Assisted by HARRY N. RUDY and FRANK N. DOWD. *Mental Hygiene in New Jersey Schools,* Bulletin of the School of Education, No. 12 (New Brunswick, New Jersey: Rutgers University, June, 1939), 104. pp.

This bulletin presents a discussion of mental hygiene practices in the state of New Jersey, with implications and suggestions.

FULMER, HENRY L. *An Analytical Study of a Rural School Area,* Bulletin 320 (Clemson, South Carolina: South Carolina Agricultural Experiment Station of Clemson Agricultural College, June, 1939), 70 pp.

The report presents an overview of the area studied: the data and how obtained, characteristics of the population, teaching personnel, pupils, buildings, and many related topics.

GOLDRING, L. W. *The Effect of Tonsillar Defects Upon the Attendance, Intelligence and Progress of School Children.* An Abstract of a Thesis Submitted in Conformity with the Requirements for the Degree of Doctor of Pedagogy in the University of Toronto (Toronto: University of Toronto, 1939), 20 pp.

From a study of the attendance records of 5,180 school children the author concludes that defective tonsils do not affect a child's school attendance, intelligence or school progress.

JUDD, CHARLES H., ET AL. *Research in the United States Office of Education.* Staff Study No. 19, prepared for the Advisory Committee on Education (Washington: U. S. Government Printing Office, 1939), 133 pp.

This bulletin contains a discussion of the establishment and growth of the office of education, studies and surveys by the office, information service and leadership personnel, and appropriations, with a concluding statement.

KEYS, NOEL. *The Underage Student in High School and College — Educational and Social Adjustments.* University of California Publications in Education, Vol. 7, No. 3 (Berkeley: University of California Press, 1938), 271 pp.

The report contains a discussion of the problem of the gifted. Part I provides an introduction; Part II treats the underage student in college; Part III the accelerated student in high school, and Part IV conclusions. Among the topics discussed are: the home and school background, scholastic achievement, student activities, later careers, physical condition, personality adjustments, and pupil attitudes are aspects considered.

LESSENGER, W. E., and OTHERS. *Selective Admission of Prospective Teachers.* Research Studies in Admission and Placement, No. 1; Wayne University, College of Education (Detroit: Board of Education, 1939), 157 pp.

The authors present detailed statistical data relative to 1,620 candidates who applied for admission to the College of Education, Wayne University, February, 1936, to June, 1938, inclusive.

MCINTYRE, G. A. *The Standardization of Intelligence Tests in Australia.* Educational Research Series No. 54 (Melbourne: Melbourne University Press, 1938), 82 pp.

A report of the Australian Council for Educational Research on the standardization of intelligence tests.

MORRISON, J., ET AL. *Scottish Primary School Organization,* Scottish Council for Research in Education, XIV (London: University of London Press, 1939), 82 pp.

The authors present an analysis of the age-grade classification and time allocation to subjects in the Scottish primary schools.

POTTHOFF, EDWARD F. *Simplifying the Combinations of Subjects Assigned to High School Teachers,* University of Illinois Bulletin, Vol. XXXVI, No. 87 (Urbana: University of Illinois, June 27, 1939), 66 pp.

The author presents data relative to subject combinations in Illinois high schools with the conclusion that teaching combinations might be simplified with numerous advantages.

RULON, PHILIP J., and BLANTON, ROBERT J. *An Occupational Classification for Research Workers; College Graduates — Men,* Harvard Graduate School of Education (Cambridge, Mass.: Crimson Printing Co., 1939), 47 pp.

The authors present an occupational classification for research workers, with a system of code symbols.

SMITH, HENRY LESTER, and MERRILL, THOMAS EATON, *The Relation of Retention to Speed of Learning,* Bulletin of the School of Education, Indiana University, Vol. XV, No. 3 (Bloomington, Indiana: Bureau of Coöperative Research, Indiana University; June, 1939), 105 pp.

After reviewing previous investigations, the authors present the results for a group of 24 college freshmen from which they conclude that retention is not a function of the speed of learning.

SMITH, PAYSON, and WRIGHT, W., ET AL. *Education in the Forty-eight States,* Advisory Committee on Education, Staff Study Number 1 (Washington: United States Government Printing Office, 1939), 199 pp.

This report includes an introductory discussion of the public schools, presenting comment and data on, The Public Schools, Public Elementary Education, Public Secondary Education, The Junior College, General Characteristics of the Curriculum, Special Problems of the Modern Curriculum, Health Education, Teaching Service, The School Plant, Education for Children in Rural Areas, Negro Education, Education for Handicapped Children, Education for Children in Private Schools, Higher Education, and Adult Education. A concluding statement, a list of the research staff and consultants of the committee, and a list of the publications of the committee complete this report.

SWEETMAN, EDWARD. *Victoria's First Public Educationalist,* Australian Council for Educational Research, Educational Research Series No. 55 (Melbourne: Melbourne University Press, 1939), 123 pp.

The author presents a discussion of the educational work of Reverend James Forbes.

TAYLOR, WILLIAM SEPTIMUS. *Education in England,* Bulletin of the Bureau of School Service, Vol. XI, No. 4 (Lexington, Ky.: University of Kentucky, June, 1939), 138 pp.

The author presents a description of education in England, discussing the National Board of Education, local education authorities, the examination system in England, primary education, post-primary education, secondary schools, vocational education, special schools, the education of teachers in England, and the universities of England. Bibliography.

WAPLES, DOUGLAS. *Investigating Library Problems,* The University of Chicago Studies in Library Science (Chicago: The University of Chicago Press, June, 1939), 116 pp.

The author presents a description of the important elements in research to make readers more competent critics. The topics discussed are: stating problems, validity of evidence, reliability of evidence—sampling, personal sources, documentary frequency, historical criticism, analysis, synthesis, and evaluation.

EDUCATIONAL ADMINISTRATION AND SUPERVISION

GOTTEMOLLER, RUTH. "The Influence of Certain Aspects of the Home Environment on the Adjustment of Children to Kindergarten," *Smith College Studies in Social Work,* IX (June, 1939), pp. 303-359.

The author presents a detailed analysis of the home environment of 22 kindergarten children in a small, prosperous town of Northeastern United States.

NICHOLS, MARY DELIA, WORTHINGTON, JOSEPHINE, and WITMER, HELEN. "The Influence of the Teacher on the Adjustment of Children to Kindergarten," *Smith College Studies in Social Work,* IX (June, 1939), pp. 360-402.

The authors present detailed case studies of the teacher's influence upon pupil adjustment in two schools chosen from a large eastern city.

CURRICULA AND OBJECTIVES

BOOTH, HELEN. "An Experiment in Leisure Reading," *Pittsburgh Schools*, XIII (May-June, 1939), pp. 141-148.

The author presents the results of a study of the leisure reading of 43 pupils enrolled in a 7A class in English with a list of the books most frequently mentioned.

HARNLY, PAUL W. "Attitudes of High-School Seniors toward Education," *The School Review*, XLVII (September, 1939), pp. 501-509.

The author presents data relative to the attitudes of high-school seniors toward education, together with a scale for measuring such attitudes.

SIMMONS, MAITLAND P. "Changing Conceptions in the Relative Sequence of Major Topics in General Science Textbooks," *The Journal of Experimental Education*, VII (June, 1939), pp. 277-279.

From an analysis of sixteen general science textbooks published from 1911 through 1934, the writer tabulates the following sixteen major topics: air, animal life, electricity, energy, forces of nature, health, heat, light, machines, matter, planets, plant life, soils, sound, water, and weather for the purpose of showing the order of their appearance in the textbooks.

WASHBURN, STEPHEN M. "The Relative Difficulty of the Number Combinations in 1937, as Determined by Repeating Clapp's Investigation," *Pittsburgh Schools*, XIII (May-June, 1939), pp. 133-140.

The author presents a repetition of the Clapp investigation of number combinations from which he concludes that the results of the two investigations are very similar.

PSYCHOLOGY OF LEARNING AND TEACHING

OAK, LURA. "An Appraisal of the Betts Visual Sensation and Perception Tests As a Sorting Device for Use in Schools," *The Journal of Educational Psychology*, XXX (April, 1939), pp. 241-50.

The author presents data relative to the Betts Visual Sensation and Perception Tests from which she concludes that the materials as now used are unsatisfactory.

MEASUREMENTS, STATISTICS, AND SCIENTIFIC TECHNIQUES

EDWARDS, LON E., and ROBERTSON, M. L. "The Construction of a Scale for the Determination of the Scientific Attitude 'Sensitive Curiosity,'" *Science Education*, XXIII (April, 1939), pp. 198-206.

The authors present a scale with standardization data for the measurement of scientific attitudes.

RESEARCH NEWS and COMMUNICATIONS

Address all research news and communications to Carter V. Good, Teachers College, University of Cincinnati, Cincinnati, Ohio.

Advisory Committee on Education.—Legislation based on the recommendations of the Advisory Committee on Education has received further consideration by the Congress. At the request of Senators Harrison and Thomas, and Congressman Larrabee, Chairman of the House of Representatives Committee on Education, the Advisory Committee provided some assistance in the revision of the proposed Federal Aid to Education Act. This was introduced in slightly differing forms as the Larrabee Bill, H. R. 3517, and the Harrison-Thomas Bill, S. 1305.

Extensive hearings on S. 1305 were held in March, 1939 by the Senate Committee on Education and Labor, resulting in a published volume of 373 pages of testimony and submitted statements. Floyd W. Reeves, chairman of the Advisory Committee on Education, was the first witness and gave his views on the various provisions of the bill, as well as summarizing the case for Federal aid. Other members of the Committee and various expert witnesses who had been members of the Committee's staff also appeared in support of the bill.

The bill was favorably reported to the Senate on April 3 and remained on the calendar of the Senate without action up to the end of the session. The majority report of the Senate Committee on Education and Labor and minority reports by Senators Taft, Walsh, and Donahey are available as 76th Congress, 1st session, Senate Report No. 244, Parts 1, 2, and 3. No action on the bill was taken by the House of Representatives Committee on Education.

Proposed amendments of the Smith-Hughes and George-Deen Acts along the general lines recommended by the Advisory Committee on Education were introduced as the Larrabee Bill, H. R. 6157, and the George Bill, S. 2460. Senator George presented a statement concerning his bill which appeared in the Congressional Record, page 8151, May 19, 1939, daily edition. No action was taken on either vocational education bill up to the end of the session, but they appeared to be receiving active study by the various organizations interested in vocational education.

The Advisory Committee has continued the publication of the series of 19 staff studies announced in 1938. As of this writing, all have been issued except Staff Study No. 3, State Personnel Administration: With Special Reference to Departments of Education, which will probably appear in October. All information reaching the Committee indicates that the studies are being read throughout the educational profession, and are being used very extensively as textual materials in teacher training institutions.

The staff of the Advisory Committee on Education was reduced as the publication program reached completion, and the Committee no longer has any full-time staff.

The chairman of the Advisory Committee, Floyd W. Reeves, recently became director of the American Youth Commission. The secretary of the Advisory Committee, Paul T. David, who prepared this progress report, was also appointed to the staff of the American Youth Commission as special assistant to the director. Dr. Reeves and Dr. David will continue to serve respectively as chairman and secretary of the Advisory Committee and to give such time as necessary to its work.

State Programs of Education.—During the year the Office of Education has undertaken a comprehensive study of the organization and functioning of State programs of education. Since the study of the States' relation to higher education has been under way for several years and certain aspects of the study have already appeared in print, the present series of studies serves to round out the picture of ways in which the States function in providing public education for their citizens. Library service, an outstanding part of a State's educational program, is included in the study.

Every State in the Union has established at least one State agency for administering its educational program—the State Department of Public Instruction or a department of similar name. At the head of such department is a chief State officer known as State Superintendent of Public Instruction, Commissioner of Education, or by some similar title. Every State has established at least one State board or commission with educational functions either of a general or of a special nature. In each of these aspects of the programs of education, however, the States vary greatly. They also change greatly over a period of years.

These changes represent continuous efforts on the part of State departments of education to increase the efficiency of State services in improving educational conditions and in keeping such services in step with changing conditions. Each State recognizes that the experiences of other States in organizing and maintaining educational services are of value in planning its own services. Therefore the United States Office of Education is frequently asked for information as to practices current in the various States, and particularly those in which State departments of education are engaged.

Consequently the series of studies includes careful analysis of: (1) the wide variety of ways in which State departments of education and State library departments are organized to perform their functions, (2) their powers and duties, (3) the extent of their personnel, and (4) their relation to other departments of the State government. Included also is a study of the several State boards of education, their organization and functions. The chief State school officer, as the responsible administrative officer for the State's educational program, is the subject of another part of the study. All of these studies will attempt to bring the history of State school programs up to date, and to describe the current status of each aspect of their organization and operation.

Among the functions exercised by State departments of education are those of organizing or assisting local school districts to organize schools; administering the compulsory attendance laws; establishing programs of study and preparing courses of study; establishing the qualifications necessary for teachers and certificating teachers; administering the State school funds; promoting and supervising effective instructional programs including special facilities for vocational education, for health education, for the

education of youth and adults, and for handicapped and other exceptional children; providing for the school census; and recording and reporting school statistics for the State. Each of these functions and some others will be the subject of separate study and report. Similarly for library service, the operations of State boards, State libraries, and other State agencies and officials will be the subject of separate report.

During the year ended June 30, 1939, committees of from two to five members of the staff have visited 30 States, interviewing State officials, collecting information on a series of interview sheets prepared for the purpose, gathering printed material and documents of various types, and securing much helpful advice from school officials. By early fall all the States will have been visited and analysis of the data and preparation of the reports will be under way. At the present time it is planned to issue separate reports as listed below:

Organization and operation of State boards of education
The chief State school officer; his status and functions
The organization of State departments of education
The organization of State agencies for library service
Functions of State departments of education in the organization and administration of schools
Functions of State departments of education with respect to school finance
State supervisory and instructional programs
State supervisory programs at the elementary level
State supervisory programs at the secondary level
State supervisory programs in special education
State supervision of schools for Negroes
State supervision of health, safety, and physical education
State supervisory programs for youth and adults
State supervisory and instructional programs in parent education
State supervisory and instructional programs for art and music, and for radio and visual aids
State curriculum programs
Standardization and accrediting of schools by State departments of education
Supervision of physical plant facilities by State departments of education
Pupil personnel services, as functions of State departments of education
State programs for the pre-service education of teachers
Organization and operation of State agencies for library service

This statement was prepared by the assistant commissioner, Bess Goodykoontz, of the Office of Education.

Youth Commission.—During the past year the American Youth Commission has completed three major research projects conducted under grants from the General Education Board. These were: (1) a two-year study of the Civilian Conservation Corps, directed by Kenneth Holland, in which the social and educational aspects of the camps were evaluated and several thousand enrollees in all states were tested and re-tested to determine the effect of the camp experience upon them; (2) a coöperative program with the United States Employment Service in which improved methods of inducting youth into employment were developed in four experimental centers; and (3) a study of youth-led organizations in the United States, made by Richard Brown.

In addition, four staff studies were made during the past year. They covered the fields of recreation, the economic background of the youth problem, state programs for youth, and coöperation between schools and other youth-serving agencies.

The Commission's study of Negro youth, begun over a year ago, is still in progress. A new project consists of a program of experimentation operated in coöperation with the Civilian Conservation Corps and the National Youth Administration. An attempt is being made to devise more effective methods for assigning youth to the various camps of the Civilian Conservation Corps and to the resident centers of the National Youth Administration as a means of improving the education and social development of the enrollees.

Three books have been published by the Commission during the past year. (1) *Equal Educational Opportunity for Youth*, by Newton Edwards, of the University of Chicago, describes the great variations in the opportunity for schooling available to youth in the various states and traces these inequalities to their source in the varying abilities of the states to support education. (2) *The Health of College Students*, by Harold S. Diehl, of the University of Minnesota, and Charles E. Shepard, of Stanford University, reports the findings of the Commission's study of the health of freshmen in 35 colleges and universities and analyzes the health facilities provided by 202 such institutions. (3) *Youth in European Labor Camps*, by Kenneth Holland, is a descriptive study of all foreign developments similar to our CCC camps, based on observation of European camps and also containing data on similar developments in other parts of the world. These books are all published by the American Council on Education. During the past year the Commission has also expanded its series of mimeographed reports in the rural field to a total of seven times. These are obtainable from the Commission on payment of postage.

Two other items on the Commission's publication list are now in an advanced stage of preparation: *In a Minor Key*, a handbook of facts about Negro youth, by Ira De A. Reid; and *Education in Family Living*, by Joseph K. Folsom, of Vassar College.

Homer P. Rainey resigned the directorship of the Commission this past summer to take up his new duties as president of the University of Texas. He is succeeded by Floyd W. Reeves, who is also Professor of Administration at the University of Chicago, and Chairman of the President's Advisory Committee on Education. The latter forwarded this progress report.

Relation of School and College.—The secondary schools participating in the work of the Commission on the Relation of School and College of the Progressive Education Association are now entering upon the seventh year of their new work, with two years remaining before the study is completed. A full and complete report will be made at the conclusion of the work in 1941. A brief statement of its progress may be made now.

Although thirty secondary schools were selected in the beginning, approximately sixty are now involved. Denver, for example, was counted as one of the thirty, but all five of the senior high schools and all ten of the junior high schools of that city are participating. In other cities selected for the study, similar developments have taken place. It should be remembered that the autonomy of each school has been maintained so that each school could develop its new work as it

seemed best to those in charge. Therefore, many different types of change and innovation have taken place; however, from this independent approach many common purposes and practices have evolved.

It has been discovered that important curriculum developments cannot take place without full participation on the part of all the teachers involved in the thinking and the planning that must precede significant change. Courses of study prepared by officials at the central office, or by the principal of the school, without participation by those who are doing the teaching, are almost entirely futile. Only as teachers who are working daily with young people become convinced of the necessity for change, in order to provide more adequately for the needs of pupils, can real progress in curriculum revision be made. Leadership there must be, but without full sharing by those who do the work it is ineffective.

School administrators cannot escape the responsibility for providing time and opportunity for teachers to think, plan, and work together. This cannot be done effectively at the fag-end of a long school day. To meet this problem, some of the schools which formerly began the school day at 8:15 now begin at 9:00, giving the teachers forty-five minutes at the beginning of each day for uninterrupted coöperative consideration of what they should really be doing for the young people in their charge. The necessity for this procedure has been explained to parents and accepted by them. The time thus freed is used frequently for meetings of the whole staff for discussion of the major, common problems of the school. Invariably the staff organizes committees for the investigation of specific problems, and this morning period provides opportunity for these committees to do their work.

Not only are the teachers sharing more fully in planning the work of the school, but the pupils are thinking with the teachers about what their experiences in school should be. Their purposes are being enlisted in their own education. The technique of teacher pupil planning is difficult and, of course, mistakes have been made. It is not easy, either, for the teacher or pupil who has become accustomed to authoritarian procedure in a classroom to develop effective ways of coöperative planning and working together; however, in spite of the difficulties involved, significant progress in this important aspect of the work is being made.

This information was provided by Wilford M. Aikin, Director of the Commission.

Reading in General Education.—The Study of Reading in General Education, approved late in 1937 by a Committee of the American Council on Education and carried forward by a committee through a grant from the General Education Board, is now complete and ready for publication. The chief purpose of the Committee as defined in the request for its appointment was to make an intensive, critical study of the present status, recent trends, and current issues in reading with special reference to high schools and junior colleges, and to identify problems that are in urgent need of further investigation. At an early meeting of the Committee plans were made for the preparation of a report of findings which might serve as a source of information to research agencies, curriculum specialists, and to school officers and teachers. The project was to continue for eighteen months and was recognized as a possible means of stimulating broader interest throughout the country in reading problems and vigorous effort to increase the

reading efficiency of high school and college students.

The report consists of eleven chapters the titles and writers of which follow:

I. Social Change, General Education and Reading
Neal M. Cross, Menlo Junior College, Menlo, California

II. The Nature of Reading and Factors Influencing Reading Efficiency
William S. Gray, University of Chicago

III. Relation of Reading to other Forms of Learning
Edgar Dale, Ohio State University

IV. An Approach to Reading Through an Analysis of Meanings
Louis Zahner, Groton School, Groton, Massachusetts

V. Reading Problems in the Content Fields
Bernice E. Leary and William S. Gray

VI. American Culture and the Teaching of Literature
Lou L. LeBrant, Ohio State University

VII. Reading Interests and Tastes
Harold A. Anderson, Laboratory Schools, University of Chicago

VIII. Difficulties in Reading Materials
Bernice E. Leary, Chicago, Illinois

IX. Diagnosis and Remediation
Ruth Strang, Teachers College, Columbia University

X. Techniques of Appraisal
J. Wayne Wrightstone, Ohio State University

XI. The Library and Reading
Edward A. Wight, University of Dubuque, and Leon Carnovsky, University of Chicago

The report will be about 450 pages in length and will be issued as one of the publications of the American Council on Education. The project is in charge of William S. Gray.

Library Science.—Investigation in library science at the Graduate Library School of the University of Chicago was carried on during 1938-39 in the fields of: reading; the history of the library movement in the United States; the distribution of library facilities; school, public, college, and university library administration; and resources for research.

Reading.—A study in the field of reading was carried on in an effort: (1) to identify (a) readers by age, sex, education, and occupation, (b) the types of material read by various groups, and (c) the agencies from which materials are secured; (2) to discover the relative effectiveness of the different sources in the communication of ideas; and (3) to develop hypotheses from studies in reading previously made or now under way which may be applied in studies of the effectiveness of the radio and the motion picture as media for the communication of ideas. The study to develop these hypotheses is to be completed by May, 1940, at which time it is hoped that coördinated studies in the three fields may be carried on simultaneously.

History of Libraries.—Two studies were under way in the field of the history of libraries in the United States. The first dealt with the various social forces which brought the public library into being in New England in the 19th century. The second was restricted to the movement which resulted in the establishment of the Chicago Public Library in 1872 and the development of public libraries generally in Illinois. *The Medieval Library*, a study carried on for ten years by James Westfall Thompson and collaborators, was published during the year.

Distribution of Library Facilities.—A

study of the distribution of library facilities for Negroes in the South undertook to discover: (1) the kinds of library service available to Negroes, (2) the adequacy of its support, (3) the types of governmental administrative organization under which library service is carried on, (4) the nature of Negro library book collections, and (5) the educational and professional background of Negro library personnel.

Library Administration.—Studies in library administration dealt with: (1) the relation of the library to government in the dominion of Canada and the Canadian provinces, (2) the government and administration of the school library in cities of over two hundred thousand population, (3) the personnel (chief librarians) of public libraries in cities of over ten thousand population in the middle-western states, (4) contractual agreements relating to public and other types of library service, (5) the application of the principles of management to library administration, and (6) the unification of library service by college and university libraries through coöperative and contractual agreements and legislation.

Resources for Research.—Four studies dealt with aspects of resources for research. The first undertook to list and describe sixty or more union catalogs in various parts of the country. The second was concerned with the number of possible users of such catalogs and the extent of their use in the various regions of the United States. A third study dealt with the distribution of government documents in college, university, and research libraries. A fourth investigation was devoted to the role of university presses in the field of scholarly publication.

In addition to these studies, three surveys were completed during the year: *A Survey of the University of Georgia Library* (Chicago: the American Library Association, 1938), *A Metropolitan Library in Action, A Survey of the Chicago Public Library* (to be published by the University of Chicago Press in December, 1939), and *Libraries and Readers in the State of New York* (Chicago: the University Chicago Press, 1939).

This information was forwarded by Louis R. Wilson, Dean of the Graduate Library School.

Yale Clinic of Child Development.—The staff of the Clinic of Child Development at Yale University has completed a collaborative study which will be published in due time in book form. The volume will be essentially a genetic outline of preschool behavior. It will publish norms of behavior maturity in fields of motor, language, adaptive, and personal-social behavior, and will include procedures for developmental observation and diagnosis.

Professor Halverson is continuing his neuro-physiological studies of infant behavior. Dr. Edith Meyer, who has been associated with the Clinic during the past year as a Sterling Fellow, has completed an experimental study on "Comprehension of Spatial Relations in Preschool Children," which will be published in the *Journal of Genetic Psychology*. Mr. Castner has published a report of handedness and eyedness of children entitled, "Handedness and Eyedness of Children Referred to a Guidance Clinic." Dr. Gesell and Dr. Ilg have published papers on the early diagnosis of defects and deviations, entitled "Early Diagnosis of Behavior Defects and Deviations" and "The Practitioner's Role in Advising about Developmental Problems of the Preschool Child." Dr. Catherine S. Amatruda has been making studies of the psychological aspects of child adoption. Mrs. Louise Bates Ames completed a study on the

"Constancy of Psychomotor Tempo in Individual Infants."

The Director of the Clinic is Arnold Gesell.

Measurement and Guidance.—The Committee on Measurement and Guidance of the American Council on Education was established in July, 1936, following the recommendations of the special Committee on Review of the Testing Movement which was appointed in 1935 to outline the comprehensive approach of the Council to the whole subject of measurement and evaluation. The major responsibilities of the Committee on Measurement and Guidance, as at present organized, are as follows:

1. The administration of the psychological testing programs. Since 1924 the Council has issued annually the *American Council on Education Psychological Examination for College Freshmen* which Dr. and Mrs. L. L. Thurstone of the University of Chicago edit. In 1938 more than 600 colleges and universities used this examination in their admissions program. In 1937, 323 institutions returned scores of more than 68,000 students for the statistical summary. This tabulation represents the most comprehensive sampling for norms of any examination published in this country.

As a companion examination Dr. and Mrs. Thurstone prepare the *American Council on Education Psychological Examination for High School Students.* This test is now being used extensively by progressive secondary schools.

The *Test for Primary Mental Abilities,* prepared by Dr. Thurstone and published in an experimental edition by the Council in September, 1938, is one of the most significant contributions to guidance that has been developed in many years. It yields separate scores on seven abilities: perception, number factor, verbal factor, space factor, memory factor, induction, and reasoning. Dr. Thurstone is continuing his research on the further refinement of these and other factors.

2. The supervision of the Coöperative Test Service.—The Coöperative Test Service was established under the auspices of the Council in 1930. With headquarters in New York City, under the direction of Ben D. Wood, it produces and distributes a series of comparable achievement examinations in fundamental subject matter fields. Tests in more than fifty subjects are now available and approximately a million and a quarter copies a year are distributed.

A Subcommittee on Reading at the Level of General Education, under the chairmanship of William S. Gray, University of Chicago, has recruited a number of specialists to survey reading problems at the high school and college level. A. B. Crawford, Yale University, has investigated the whole field of scholastic aptitude examinations for the committee. During the past year the committee has assisted O. K. Buros, Rutgers University, in the completion of an analytical bibliography of tests.

The Committee on Measurement and Guidance coöperates with the Educational Records Bureau and the Progressive Education Association in the sponsorship of the Educational Conference which is held in New York City late in October of each year and which is devoted to the consideration of methods of individualizing education. The committee also sponsors an annual conference of representatives of

This progress report was prepared by H. E. Hawkes, Columbia University, Chairman of the Committee.

Michigan Curriculum Program.—Since November, 1935, the Michigan Department of Public Instruction has been actively engaged in an intensive program

of instructional improvement. The Michigan program is coöperatively organized under the leadership of the Superintendent of Public Instruction, who is advised by the Curriculum Steering Committee, composed of educators representative of various interests and institutions, and a group of consultants. The program is not designed to develop a definite course of study to be imposed on local systems, but is designed to stimulate careful studies of community needs and community educational programs.

A strong emphasis has been placed upon the community school and upon a curriculum which is connected to the community in many ways. The teacher is considered to be the most important element in improving instruction because of the fact that the teacher makes a great many curriculum adjustments each day in the classroom. The organization is based primarily upon local curriculum studies under the direction of local administrators. A lay advisory commission participates in planning the program, and school officers and other lay groups have been involved in the program in many ways.

Major achievements of the past year include:

1. Publication of three bulletins dealing with curriculum materials and improvement procedures.

2. Reorganization of the Department to provide a unified service for the improvement of instruction.

3. Organization of conferences and clinics (including the Annual Conference on Curriculum and Guidance, and numerous other curriculum conferences and study groups), and a lay participation program which included the injection of discussions of instructional improvement in county school officers' meetings and the annual Citizens Conference (sponsored by the Department).

4. The Michigan Study of Secondary School Curriculum initiated in September, 1937, is well under way. Its major achievements consist of a study of the secondary education situation in Michigan and of curriculum development in secondary schools in the United States; the development of a curriculum library in the offices at Lansing; the initiating of plans for developing descriptive surveys of the instructional programs in each of the 54 schools involved in the study; and the operation of the coöperative secondary workshop in Ann Arbor during the summer of 1938. The Study is conducted by a full-time director and staff operating under the leadership of the Directing Committee of the Michigan Study of the Secondary School Curriculum.

The study of key problems has been carried on by special curriculum committees, of which the principal ones are: Administration of the Instructional Program, Community Relations of the Curriculum, Education in Rural Areas, Elementary Education, Health Education, Instructional Organization of Pupil Personnel, the School as a Social Institution, and Youth of Secondary School Age.

A recent appraisal based upon the reports of 301 superintendents, commissioners, and supervisors may be summarized in part as follows:

1. Major curriculum changes numbering 202 ranging from the addition of vocational education to complete reorganization of a program are reported.

2. Plans for curriculum programs and changes for 1938-39 number 234.

3. Organized faculty study groups are reported in 154 cases.

4. Aims, basic points of view, and approaches of the programs received almost unanimous approval.

This information was forwarded by Robert Koopman.

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Volume X

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